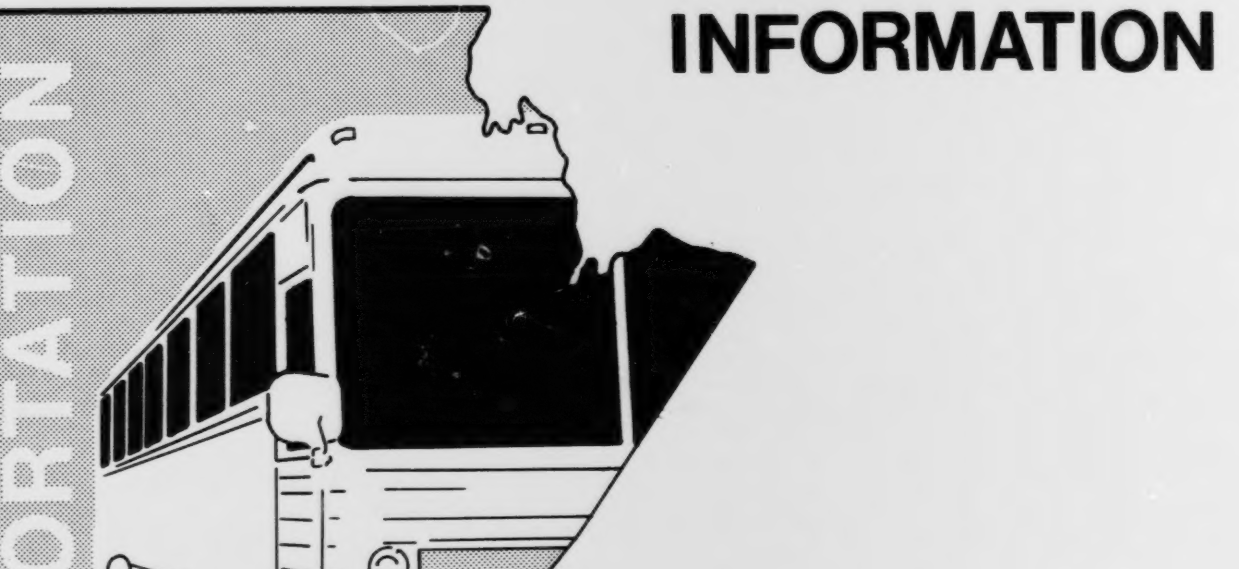
manitoba motor carrier industry

BACKGROUND INFORMATION


TRANSPORTATION

Prepared for —— The Task Force Review of Motor Carrier Regulations in MANITOBA.

FOREWORD

This report consists of six papers prepared at the request of the Task Force by staff of the Department of Highways and Transportation. Any opinions or value judgements made in the papers are those of the individual authors and do not necessarily represent the views of the Task Force.

The first paper presents an historical review of motor carrier regulation and describes how the current regulatory regime was developed by examining legislation as it pertains to safety, economic regulation and taxation. The second paper describes the current regulatory environment and discusses practices and procedures of the Motor Transport Board.

Since many other provinces are currently reviewing their approach to motor carrier regulation it was thought useful to include as the third paper an overview of the situation in other jurisdictions.

The fourth paper presents a simple overview of the economic theory of regulation and discusses the various factors advanced to justify regulation of this sector of the economy. The following fifth paper examines the structure and performance of the motor carrier industry within the regulatory environment which currently prevails in Manitoba.

The sixth paper discusses the history of changes, the technical basis, costs, benefits and taxation problems associated with the regulation of vehicle weights and dimensions. This paper is included because of the growing concern on the part of provincial highway departments as to the costs and benefits of increases in allowable truck weights.

A previous report entitled, "System Characteristics" provided statistical information on the motor carrier industry. It is hoped that the above report and the papers in this report will provide the public with background information useful and pertinent to presentations they may wish to make to the Task Force.

A third report, addressing the problems and issues arising from the current regulatory environment and the range of options available to deal with them, will be published in the near future. The latter report will be a prelude to a series of public meetings at which the public will be asked to make their views on motor carrier regulation known to the Task Force.

John C. Rea
Chairman
Task Force Review of
Motor Carrier Regulation

DEVELOPMENT OF
MOTOR CARRIER REGULATIONS
IN MANITOBA

JUNE, 1983

The [illegible] paper discusses the history of [illegible], the [illegible] basis, costs, benefits and regulatory problems associated with the regulation of vehicle weights and dimensions. This paper is included because of the ongoing concern [illegible] governments as to the costs and benefits of increasing [illegible].

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John C. [illegible]
Chairman
Task Force, Review of
Motor Carrier Regulation

DEVELOPMENT OF MOTOR CARRIER REGULATION IN MANITOBA

Introduction - Purposes of the Review

From the earliest days Canadian governments have been deeply involved in transportation. Considering the vastness of the country, its sparse population, and the vital role of transportation in keeping the country together, government involvement is not surprising. Governments are involved in virtually every aspect of transportation: the building of harbors and canals, the improvement of natural waterways, the operation of ferries, construction and operation of airports, licensing of air carriers and regulation of air traffic, the regulation of railways, the construction and maintenance of roads, the registration and insurance of automobiles, traffic regulations, and the licensing and regulation of motor carriers.

Provincial regulation of the for-hire transport of passengers and goods on roads was a natural corollary of federal regulation of railway transport. However, in recent years the benefits of government regulation have been widely questioned as a result of increased competition between various modes of transportation (road, rail, water and air). This development seemed to ensure that frequency, quality and price of services would reasonably correspond with demand and so regulations to protect users of transportation could be relaxed.

Accordingly, federal transportation policy shifted away from reliance on regulation to reliance on competition - a shift formally recognized in The National Transportation Act of 1967.

There were important exceptions; e.g rail transportation of prairie grain remained strictly regulated; ferry services to PEI and Newfoundland continued to be heavily subsidized; in general, however, federal policy since 1967 has been to rely more on competition and less on regulation of transportation services.

In Manitoba, motor carriers are the predominant mode of transport for passengers and goods. In the early days of motor transport the licensing and regulation of carriers was performed by the Municipal and Public Utilities Commission, at first under the general authority of The Public Utilities Act, and after 1930 under the authority of The Highway Traffic Act. In 1954 a separate board, the Motor Carrier Board was entrusted with the regulatory functions; that board evolved into the present Motor Transport Board.

Meanwhile the structure and the methods of operation of the trucking industry have changed in ways that were not foreseen in the legislation. For example, certain practices such as leasing, arrangements between common carriers and independent truckers and freight brokers, etc, seem to indicate that the industry has outgrown the regulatory system which was devised decades ago. Means to circumvent restrictions explicit and implicit in legislation have become so sophisticated that the law is well-nigh unenforceable. Some jurisdictions have responded by substantially relaxing restrictions in order to bring the regulatory framework more in tune with reality; e.g the so-called deregulation of the trucking industry in the United States. Other jurisdictions have made substantial legislative revisions and plan to make more (e.g. Ontario). These actual, and contemplated, changes affect the operations of Manitoba based truckers.

In Manitoba the Motor Transport Board has been flexible in the exercise of its authority and to some extent the board has adapted its operations to current practices in the industry. As long as economic conditions were reasonably good there were few complaints. Unfortunately, the onset of the depression has forced severe cutbacks in the trucking industry while it has sent shippers in search of ways to cut, among others, transportation costs. Pressure is now being exerted by the trucking association to "enforce the law", while other interest groups call for exemptions or even for complete deregulation.

The time seems right to take stock of what is happening in the motor transport industry and to review the regulations under which the industry operates. Also, the changes in the structure of the industry and the changes in the economic environment make it desirable to reformulate the objectives of regulation. In other words, what are the purposes of regulating the motor carriers?

To formulate a suitable method of developing a satisfactory provincial transportation policy, in line with the requirements of both the transport industry and its users, the Minister of Highways and Transportation has decided that the provincial task force will:

1. Consult with the users of transportation services in Manitoba, shippers and receivers, in order to assess their perceptions of the adequacy and efficiency of the services provided and their suggestions for improvements.
2. Consult with the participants in the industry - P.S.V. carriers, commercial truckers, independent truckers (owner-operators) in order to assess their perceptions of problems and opportunities in the industry.
3. Examine the existing regulatory framework in relation to present conditions in the motor transport industry.
4. Determine changes in motor transport regulations introduced or contemplated in other jurisdictions and where possible assess the potential impact of those changes.
5. Determine the role of government in regulating the industry, and to make recommendations for regulatory changes.

In addition to the preceding terms of reference, the study will assess the potential of increasing the coordination of highway and railway transportation. This, of course, is a very complex undertaking and it is anticipated that it will take considerable time to fully examine the issues. Meanwhile, this review deals with the more immediate regulatory issues.

ORIGIN AND EVOLUTION OF MOTOR TRANSPORT REGULATIONS IN MANITOBA

Defining regulations

In its 1981 report "Reforming Regulations" the Economic Council of Canada gives the following definition of regulation:

> "Regulation is a political-administrative process specifically designed to replace or modify the operation of economic markets, or, in some cases, to fill gaps where no markets exist. Both the decision to regulate and the decision to change regulatory processes significantly are made in the political arena..."

Two paragraphs later the Council gives a different definition of economic regulation - namely,

> "the imposition of constraints, backed by the authority of government, that are intended to modify economic behaviour in the private sector significantly."

It may be noted that the second definition is quite a bit narrower than the first.

The second definition speaks only of the imposition of constraints to modify economic behavior, while the first definition talks about a much broader "political administrative process."

Clearly, governments aim to modify economic behavior through a wide range of measures of which the imposition of constraints is only one. In fact, economic regulation in the broadest context encompasses all government policies and programs which significantly affect economic activity. The first definition seems to allow for the broad interpretation of regulations; the second definition seems unnecessarily restrictive.

A broad definition of regulation will be used in reviewing the regulation of motor transport in Manitoba - broad in the sense that many regulatory constraints, particularly in the field of transportation, have been designed to stimulate and encourage the growth of an industry or to stabilize it rather than restrain it. These regulations have affected both provincial and federal transportation policies and historically have been designed to serve additional economic goals.

Regulation of motor transport covers three broad areas:

1. Safety and responsible behaviour; e.g. safety standards of vehicles and equipment, rules of the road, automobile insurance.
2. Taxation and other conditions for the use of the public road system; e.g. classification of vehicles, registration fees, fuel taxes, weight restrictions.
3. Control over the business of transportation e.g. licensing, rate control. This is often called economic regulation.

Although it is convenient to thus divide regulations into categories and to treat each category separately, there is considerable overlap between the different categories. For example, regulations aimed at improving safety may increase the cost of transportation services;

taxation (registration fees and fuel taxes) affects the ability of motor transport to compete with rail transport; differences in registration fees and/or fuel taxes between different categories of road users affect the competitive position of one class of carrier versus another; conversely, economic regulations such as restrictions on entry and limits on hours of work may affect the safety of highway traffic.

It is the purpose of this review to examine the economic regulation of the industry, the controls over the business of transportation and their effects. However, because of the overlapping of regulations, comments on other areas of regulation cannot be avoided.

The matter is further complicated by the overlapping of federal, provincial and municipal jurisdictions. Although it has undisputed jurisdiction over interprovincial transportation, the federal government has for all practical purposes delegated its authority to provincial boards. Provincial legislation enables municipal authorities to make rules and regulations for transportation businesses carried on within municipal boundaries and in the immediate surroundings. On the other hand the legislation does not permit municipalities to levy taxes or fees on the ownership of motor vehicles, thus creating an element of discrimination between classes of carriers.

The section that follows presents an account of the history of transport regulation in Manitoba.

Origin and Evolution of Motor Carrier Regulation

Motor carrier regulation had its origins in the transportation policies of federal and provincial governments as they applied to railways.

In the first half-century of Confederation government transportation policy was mainly concerned with railways. The overriding objectives of the Dominion government were the settlement of the west and the development of its agricultural potential, which in turn required the construction of a railway system. Construction of a railway from central Canada to the Pacific Ocean was thus a matter of the highest priority. Following completion of the CPR mainline, the monopoly position of CPR and the absence of a rate setting authority to curb what were considered exorbitant freight rates were seen as factors retarding the settlement of the west, and were therefore in conflict with the purposes of the Dominion. Thus, public control over freight rates became an essential element of national policy.

The Crow's Nest Pass Agreement gave the government control over rates charged by CPR. Subsidy agreements with the Canadian Northern and the Grand Trunk railway companies also provided for government control over rates. The view that freight rates had to be controlled was shared by the Manitoba government which tried to justify a guarantee of $31 million Canadian Northern Railway bonds on the grounds that the guarantee would give it control over rates (which it did not). In summary, public regulation of transportation was firmly established decades before highway transportation became significant.

While the federal government assumed regulatory control over the national railways, the provincial government embarked on a comprehensive program of regulating public services within the province. The Public Utilities Act was enacted in 1912. Public utilities were defined as "enterprises subject to the jurisdiction of the Province, owning or operating telegraph, telephone, railway or tramway transportation, or furnishing water, gas, heat, light or power, and the Manitoba Government telephones and grain elevators". (1)

Transportation issues with which the Commission had to deal included virtually every aspect of the operations of the Winnipeg Electric Railway Company as well as the rates and quality of service of the Winnipeg, Selkirk and Lake Winnipeg Railway Company.

Predating the establishment of the Public Utilities Commission was the enactment in 1908 of The Motor Vehicle Act. The Act provided that the owner of a motor vehicle had to register it in the office of the Municipal Commissioner. The initial registration fee was $5 and annual renewals $2. The Act also provided for the registration of chauffeurs; at least two "responsible persons" had to certify that he was a "person of reliability". Amendments to the Act in 1912 authorized municipalities to license automobile liveries or "persons letting or having motor vehicles for hire or gain" and to "make rules and regulations for controlling such business or occupation". In 1921 registration fees were set on the basis of horsepower. In 1923 a fee schedule was introduced based on the length of wheel base for cars and according to carrying capacity for trucks. In the same year The

Gasoline Tax Act was passed imposing a tax of one cent per gallon on gasoline.

Specific regulation of motor transport of passengers and express freight was introduced in 1926. Amendments to The Motor Vehicle Act made it mandatory to obtain a license from the Municipal Commissioner to operate a motor bus to carry passengers and express freight, to show the highway or highways over which the motor bus was to operate, and the maximum number of passengers and weight of express freight to be carried.

In 1930 The Motor Vehicle Act was replaced with The Highway Traffic Act. Part VIII of the Act gave the Municipal and Public Utilities Board (MPUB) authority to regulate public service vehicles, viz. sections 96 and 97:

> 96.(1) The Board may specify the routes over which a motor carrier may operate, fix the maximum or minimum tolls, fares or charges on routes over which a motor carrier operates or proposes to operate, regulate and supervise schedules and service of motor carriers, and the maintenance, equipment and method of operating of public service vehicles, require the filing of returns, reports and any other data by motor carriers, and regulate and supervise motor carriers in all matters affecting the relationship between such carriers and the public.
>
> (2) Like powers, duties, authority and jurisdiction as are vested in the Board under "The Municipal and Public Utility Board Act" for public utilities and their owners are hereby vested in the Board over motor carriers and public service vehicles, except as herein otherwise provided.
>
> 97. Except as provided in this Part, no person, firm or corporation by himself or by an agent or employee shall operate a public service vehicle upon a public highway in the province for the transportation of persons or property for compensation without

> holding a certificate issued by the Board allowing such vehicle to be so operated.

According to the annual report of the MPUB for the year 1930 the Board issued certificates to 24 operators of motor buses who operated 37 buses in 1930. The applications of 19 were refused on the ground of inadequacy of equipment and sufficiency of existing services. The total certified trucks operating on the highways was 141 owned by 95 operators. The total freight moved was 50,000 tons and the total revenues reported (from freight) was $253,336.63.

The Board immediately began preparations for the regulation of rates. The Board reported that:

> "During the year a draft of freight classifications and rates was prepared by a committee of operators, with the assistance of the Board's inspector, Mr. Brown. Several hearings were held at which representatives of operators, shippers and the railways attended, and were heard. So far as possible the standards of the Canadian Freight Association, approved by the Board of Railway Commissioners for Canada, have been followed. This applied to motor carriers is somewhat advantageous to shippers, as cartage charges at shipping and delivery are eliminated."
>
> The tariff of tolls went into effect on the first of May, 1931.

The advance of trucking was not greeted with enthusiasm by everyone, viz. the observation of the Board in its 1930 Annual Report:

> "Protests against truck operations have been received during various times from railways and rural towns and villages. If motor truck competition materially increases, some branch railway lines must be detrimentally affected. Whether these communities can wisely be permitted to be deprived of railway services, in our

climatic conditions, will then become a serious question of public policy".

The Board's concern over "the effect of motor truck competition on the branch railway lines of the Province" is repeated in the annual report of the following year. However, the Board makes no recommendations. The report does note that "With the reduction in train service on some of the branch lines a notable increase in the number of applications for truck route privileges is recorded".

A 1932 amendment to the Act placed commercial trucks under the authority of the Board. In its annual report the Board described commercial trucks as:

> "Private carriers who use the highways in connection with manufacturing, commercial merchandising and other miscellaneous business enterprises, and who make deliveries and indirectly charge the cost of delivery in the price of the product which they sell, or who buy livestock, farm products, etc. for resale."

While this might be a good working definition for the Board, it was too broad or all inclusive for the legislation. The Act excluded from the category of commercial trucks all trucks that were:

- operated by a public body
- used to haul sand and gravel for the construction of a public road or highway
- operated only within the boundaries of city, town or village
- operated by a merchant to deliver within a distance of six miles of his establishment

- owned and operated by a farmer
- exempted by the Board.

In 1934 there were 481 PSV trucks and 531 commercial trucks out of a total of some 11,500 trucks registered in Manitoba. The definition of commercial truck was amended almost every year throughout the 1930's but the approach has remained the same to this day, namely definition by exception.

Registration fees for public service vehicles and commercial trucks were considerably higher than for other trucks. Fees for public service vehicles and commercial trucks used to haul milk and cream ran from a minimum of $25 to a maximum of $265, other public service vehicles and commercial truck fees were $30 minimum and $390 maximum depending on carrying capacity, while registration fees for other trucks in 1934 were $10 per truck not over 3 tons plus $5 for each additional half ton.

While the Municipal and Public Utility Board was given the responsibility of regulating motor carriers, the classification of highways and the setting of weight restrictions was the responsibility of the Department of the Municipal Commissioner. To provide for coordination between the two authorities, and perhaps to ease the heavy workload of the Board, The Highway Traffic Act was amended in 1933 to expand the Board to include the Highway Commissioner and the chief engineer appointed under The Good Roads Act, 1914. The two additional members served on the Board only on matters relating to The Highway Traffic Act.

The enlarged Board was given the responsibility for the classification of highways as Class B under Section 23 of The Highway Traffic Act. In its annual report for the year 1939 the Board reports that "bylaws of local authorities have now been approved for 24 out of 117 rural municipalities in the Province ..."

Early in the decade pressure built up in the municipalities of Greater Winnipeg to bring order to the taxicab business. The Highway Traffic Act left the registration of public service vehicles within municipal boundaries to the municipal authorities. However, the councils of the cities and municipalities in Winnipeg failed to act. In 1937 the Legislature amended Section 12 of the Highway Traffic Act as follows:

> "Each municipality in Greater Winnipeg shall comply with and enforce the provisions of Part VIII of this Act and all regulations and orders made thereunder."

The amendment was to come in force by proclamation. It was never proclaimed.

In 1935, the Legislature passed The Taxi Cab Act, by which the operations of the taxi cabs in the area defined in the statute as "Greater Winnipeg" were regulated by a statutory board composed of the three members of the Municipal and Public Utility Board together with one alderman of the City of Winnipeg and the Chief Constable of the police force of Winnipeg.

In all other municipalities the regulation of taxi cabs was left to the local authorities. The taxi cab business in Winnipeg has remained under provincial jurisdiction to this day. The Taxi Cab Board was separated from the Municipal and Public Utilities Board in 1955. It now consists of three persons appointed by the Lieutenant-Governor-in-Council, one member of the Council of the City of Winnipeg and the Chief Constable of Winnipeg's police force.

By 1939 there were 707 trucks and trailers with public service vehicles registration, 83 buses and 1411 commercial trucks and trailers out of a total of 94,431 registered motor vehicles (70,704 cars, 18,095 trucks, 5,632 trailers).

In 1937 the Act was amended to establish maximum hours of work. The amended Section 112 provided that:

> "Except in the case of emergencies due to breakdowns, no driver of a public service vehicle or commercial truck, including the owner of such a vehicle or truck who is also the driver thereof, shall be on duty more than nine hours, nor in any capacity more than twelve hours in any twenty-four consecutive hours, nor on duty more than six days in any one week."

The MPUB was given authority to:

> "regulate the hours of employment and the rates of wages of employees of motor carriers and fix the maximum hours of employment and the minimum rates of wages of such employees."
> (RSM1940, CAP93S130(1))

Furthermore, the Act provided that a certificate to operate a PSV or commercial truck may be conditional for "the payment of reasonable wages and observance of proper conditions of service in respect of the employees of the holder." (RSM1940, CAP93S.167(3))

Section 112 was further amended in 1941-42; the maximum hours on duty with a truck or in any capacity were both set at 10 hours in any 24 hour period.

It is clear that by making the provision apply to the owner (if he was driver) as well as the employee the Act aimed at improving safety on the highway as well as at improving working conditions for employees.

The provisions regarding hours on duty and working conditions were dropped when the Act was rewritten in 1966.

An amendment to the Act passed in 1938 provided authority to set fees for public service vehicles and commercial truck certificates by Order-in-Council. O/C 1437 1/2 dated December 23, 1938, set a new fee schedule for public service vehicles and commercial trucks. The regulation also contained the following clause:

> "6. In the case of the transfer of a public service vehicle certificate, or the right to same, from one motor-carrier to another, or to a proposed motor-carrier, a fee of twenty-five percent of the amount by which the total consideration exceeds the said Board's appraised value of the equipment and physical assets transferred, shall be paid in addition to all other fees."

The clause was remarkable because it recognized explicitly the capitalization of the value of public service vehicle certificates, and in fact aimed at appropriating one-fourth of the capitalized value when certificates were transferred. The Board's annual report for 1946 mentioned that $3,260.60 was collected in 1945 under clause 6 of Schedule B involving 49 transfers of certificates, and $9,502.81 involving 56 transfers in 1946. No mention is made of the provision in other annual reports.

The provision aimed at sharing in the capital gain of public service vehicles certificates was the more remarkable because section 100 of The Highway Traffic Act, 1930 seems to prohibit the capitalization of certificates:

> "100.(1) No right, privilege or certificate held under or obtained under this Part shall be capitalized, and the same shall not be sold, assigned, leased or transferred except with the approval of the Board had and obtained in writing."

Regulation 1437 1/2 was replaced with an amended Schedule B to the Act in 1947. The new clause regarding transfer of certificates read:

> "Upon the sale of any public service vehicle, livery or taxicab, subject to this schedule, the vendor shall cease to have any rights to operate the vehicle and shall or, in the case of his death, his legal representative shall forthwith return the certificate, license, permit or registration card to the Board. The new owner if he desires to continue to operate the vehicle in the same capacity shall apply for the requisite authority to do so, and pay the fees which would then be due, notwithstanding that the fees for that year have been paid by the previous owner."

Section 100 of the Act of 1930 prohibiting the capitalization of certificates has remained unchanged; it is now Section 266(1) of The Highway Traffic Act.

An amendment to the Act in 1940 designated the Board as "The Motor Carrier Board". In 1945 the "Highway Commissioner and the Chief Engineer appointed under The Good Roads Act" were replaced with the "Deputy Minister of Public Works or the Assistant Deputy Minister of Public Works and the Chief Engineer of the Highways Branch of the Department of Public Works" as the designated civil servants on the Motor Carrier Board. However, the Board remained part of the Municipal and Public Utility Board until 1955 when an amendment to The Highway Traffic Act established the Motor Carrier Board as a separate entity.

During the war years restrictions were placed on the operation of buses and commercial trucks as part of the national effort to conserve gasoline and oil. This caused some disruption and hardship. In its 1944 report the Board observes that "It was generally recognized that the motor truck has become an essential agency for the transportation of freight ..." In effect the advent of motor transportation had brought about an important change in the method of doing business. Because of greater frequency of delivery than was possible with rail service, truck transportation significantly reduced the inventory requirements of local businesses.

An amendment to The Highway Traffic Act in 1942 established farm trucks as a special category. A farm truck was defined as:

> "A truck owned by an actual farmer and operated in the marketing of the produce, including livestock, of his own farm, or in the conveyance of property for use thereon when the name of the owner and the word 'farmer' are legibly painted on both sides of the body of the truck."

It would appear that the original intent was to permit under age drivers to operate farm trucks to relieve the manpower shortage on farms caused by the war. However, it was not long before farm trucks and trailers were favoured with lower registration fees than other trucks. By amendment to the Act in 1948 farm trailers received a favourable rate and in 1953 an amendment reduced the registration fee for farm trucks. By 1954, there were four different schedules of registration fees for trucks:

Summary of Truck Registration Fees, 1954

Gross Vehicle Weight	PSV and C.T.	PSV and C.T. Milk & Cream Only	Other Trucks	Farm Trucks
1 ton or less	$30	$25	$12.50	$12.50
each additional 1/2 ton	$15	$10	$ 5.00	$ 2.50

In 1945 the Canadian Pacific Railway Company applied for a trucking license out of Brandon. Its first request was refused because it included shipping by truck directly out of Brandon of freight not having been forwarded by rail, in direct competition with other public service vehicle operators. Its second application was approved as part of rail - truck movement. The following year Canadian National

Railways became involved in trucking through contracts with trucking companies, and in 1948 CPR through its subsidiary CP Transport Company "entered the field of transportation by highway in the Province of Manitoba."

In its annual report for the year 1947 the Board recommended that a review of motor transport regulation be undertaken:

> "Having regard to the developments which have taken place in various activities governed by the provisions of The Highway Traffic Act, in particular under Part VIII, which regulates the use of the highways by commercial vehicles, the respectful submission of the Board is that all the provisions of this part be re-examined by a committee of the Legislature or a specially appointed commission to ascertain and report upon the activities carried on by the Board thereunder, what improvements can be, or corrections should be made. It will be recalled that a special tribunal or group in 1930 examined various statutes and practices and submitted to the Government of that time a draft of what became The Highway Traffic Act of 1930".

However, it seems that no review of motor transport regulation took place. There is no further mention of the subject in subsequent annual reports.

Interprovincial motor transport began to assume importance in 1951 when the Board approved applications for the transportation of general freight to and from southern Ontario and to and from British Columbia. In the same year the Board also licensed 18 operators (42 public service vehicle licenses) to haul automobiles from eastern Canada. Since there was no federal legislation covering interprovincial motor transport there was some confusion over the jurisdiction of provincial boards over such traffic. It appears that unlicensed truckers developed a considerable amount of business in interprovincial trucking. The federal Motor Vehicle Transport Act came into force on August 1, 1954. The Act essentially left the regulation of interprovincial motor transport to the existing provincial authorities. This necessitated cooperation and coordination between the provincial authorities. The Manitoba Board reported that it was "pursuing a vigorous program to control interprovincial trucking". (Annual Report 1954)

In its 1955 report the Board stated:

> "By January 1955 the Manitoba Provincial Transport Board had made plans to control interprovincial trucking. Notices were posted to all truckers operating into, through, or out of Manitoba to obtain authority from the Manitoba Provincial Transport Board forthwith. This program took many unlicensed or 'gypsy' operators off the road, and by April 30, 1955, nearly all freight was being handled by legitimate carriers. This had a stabilizing effect on the industry."

As observed earlier, the regulation of interprovincial highway transportation required cooperation and coordination among provincial authorities.

In 1954, Manitoba's Premier Campbell invited representatives from all provinces to a conference to discuss interprovincial coordination of regulations regarding highway traffic and motor transport. Since then interprovincial meetings of regulatory bodies were held annually. This led to the formation of the Canadian Conference of Motor Transport Administrators (CCMTA) with a permanent secretariat. Although CCMTA is itself not a regulatory body it provides a ready mechanism for directing discussion and examination of issues connected with highway traffic. Issues range from impaired driving, seat belt legislation, road safety, vehicle weights and dimensions, to the optimum role of tariff bureaux. In short, the growth in highway traffic has necessitated consultation and coordination among the provinces on a broad front. Although the provinces guard their autonomy there is persistent pressure towards uniformity and standardization.

An amendment to the Act in 1959 established the Highway Traffic Board in addition to the Motor Carrier Board. The Traffic Board consisted of not less than seven and not more than nine members appointed by the Lieutenant-Governor-in-Council. The Traffic Board was given authority to establish restricted speed areas on provincial highways, to approve municipal by-laws with respect to speed restrictions in municipalities, and to make orders with respect to lighting, signalling and other equipment of motor vehicles. The Traffic Board also had authority over traffic control devices.

An amendment to the Act in 1960 clarified that the Motor Carrier Board had the authority to approve municipal by-laws with respect to the classification of roads as Class B highways, and to approve municipal by-laws setting weight restrictions on streets and roads in Greater Winnipeg and other cities and towns in Manitoba.

A substantial amendment to The Highway Traffic Act in 1961 added a new part to the Act, Part III A, Control of Highways. Under this part the traffic board was given control over access to highways and over the use of land bordering on limited access highways.

In 1966 The Highway Traffic Act was completely rewritten. Part III A of the old Act became a separate Act, The Highways Protection Act. The new Highway Traffic Act combined the Motor Carrier Board and the Highway Traffic Board into one board, called the Highway Traffic and Motor Transport Board. The new board consisted of not more than seven members to be appointed by the Lieutenant-Governor-in-Council. The Deputy Minister and Chief Engineer were no longer members of the board. The combined board endured till 1976 when by amendments to both Acts the Highway Traffic Board was established under The Highways Protection Act and the Motor Transport Board was established under The Highway Traffic Act.

In the sixties and seventies some rather important changes were made in the legislation affecting the use of farm trucks. In 1967 an amendment to The Gasoline Tax Act permitted the use of tax-exempt coloured gasoline in farm trucks. (The gasoline tax at the time was 17 cents per gallon). The definition of a farm truck remained as it had been since 1942, a truck owned by an actual farmer and "operated in the marketing of the produce, including livestock, of his own farm, or in the conveyance of property for use thereon." Hence a farm truck could not be used to transport goods for others.

Amendments to The Highway Traffic Act in 1970 changed the definition of farm truck to that of a truck owned by a farmer, gave a definition of "farmer" which left the registrar of motor vehicles some discretion, and set out in Section 169.1 the authorized use of farm trucks. The authorized use included the transportation of produce or products of the farm belonging to another farmer (Section 169.1(2)c), but prohibited the "transportation of persons or property for hire, gain or reward or the hope or expectation thereof" (Section 169.1(4)).

The following year another subsection (169.1(5)) was added which permitted the use for compensation of a farm truck to transport cereal grain or sugar beets from the farm where the crop was grown to a grain elevator or processing plant. An amendment in 1972 included vegetables and fruit among the crops and in 1980 oilseeds were added to the list of products which may be carried by farm trucks, for compensation, from the farm where the crops were grown to market or processing plant.

The result of the various legislative changes has been a very substantial increase in the use of farm trucks in the for-hire transport of farm products.

Summary and Conclusions

It has been noted earlier that regulation of motor transport covers three broad areas (with considerable overlapping); safety and responsible behaviour, taxation and other conditions placed on the use of the public road system, and economic regulation, i.e. control over the business of transportation. Regulation is further complicated because of the overlapping of federal, provincial and municipal jurisdictions.

In Manitoba, the early concerns of the Motor Vehicle Act, 1908, were with safety and responsible behaviour which have remained the major preoccupations of the Highway Traffic Act (the successor to the Motor Vehicle Act) to this day. Except for the fact that economic regulation may affect safety and responsible behaviour, this area of regulation is not the concern of this review.

Economic regulation of transportation had its beginning in Manitoba in 1912 with the enactment of the Public Utilities Act. The Public Utility Commission had the responsibility of regulating the street car service in Greater Winnipeg and the service between Winnipeg, Selkirk and Lake Winnipeg. Also in 1912 the Motor Vehicle Act was amended to authorize municipal authorities to license automobile liveries and to make regulations to control such businesses or services. Regulations of inter-city transportation of passengers and express freight was introduced in 1926, and four years later the Public Utility Board was charged with the regulation of for-hire trucking in the province. Its responsibility did not include the regulation of trucking services within cities, towns and villages and their immediate surroundings and in Greater Winnipeg. Although the exemption of local trucking services was consistent with the policy set in 1912 of leaving local matters to local authorities, it did create inconsistencies and discrimination in taxation. Owners of trucks registered as P.S.V. trucks with the Board paid substantially higher registration fees than other truck owners. The PUB had no difficulty justifying the higher registration fees:

> "The view of the Board is that where an industry is regulated by public authority, that industry, and not the taxpayers generally, should pay the cost of regulation." (Report on the Taxicab Industry in Greater Winnipeg, Oct 26, 1931, p.10.)

Somewhat at variance with the view that the higher P.S.V. registration fees served to offset the cost of regulation was the fact that registration fees for vehicles used to transport milk and cream only were set lower than other P.S.V. registration fees; they are still lower today. The reasons for this discrimination are not entirely clear. It is possible that the legislature considered it desirable to give farmers preferential treatment because farm prices were depressed.

Also at variance with the Board's view that the beneficiaries of regulation should be made to pay for the associated costs was Section 124 of the Highway Traffic Act, 1930 (Section 85(1) of the current Act) which prohibited municipal governments from levying a tax, fee, license or permit on the ownership or use of motor vehicles. Hence, while municipalities had (have) the power to regulate they did (do) not have the power to make the beneficiaries of regulation pay for the cost.

More inconsistencies were created in 1932 when the owners of commercial trucks were required to register with the MPUB. By definition, commercial trucks carried the owners' goods; they were not common carriers, and they did not require the Board's supervision regarding rates or the quality and frequency of service; charging the owners of commercial trucks the same registration fees as PSV trucks could therefore not be justified on the basis of services provided by the MPUB. The measure may have been introduced for the purpose of raising revenue, although other factors may have played a role. Commercial trucks (also called private trucks) are a business alternative to for-hire carriers. PSV operators might therefore be justified in arguing that registration fees (a form of taxation) should not be used to favour one class of carrier over another.

The definition of commercial truck was (and is) the cause of further anomalies. By excluding farm trucks, trucks operated to haul sand and gravel used in the construction of a highway, and trucks operated locally only, the legislation singled out a fairly small group for special taxation.

Obviously, economic regulation and taxation overlap at this point. When the legislation was passed PSV and commercial trucks accounted for less than 10% of all trucks registered in the province; that proportion has not changed appreciably to this day. The definition of commercial trucks has not changed much either; farm trucks are still exempt; in practice, the definition of trucks "operated to haul sand, gravel or other material for use in the construction and maintenance of a public highway" has come to include all dump trucks whether they are used for highway construction or for other purposes; the definition of local use is defined as within 30 km of the city, town or village where the registered owner resides, but if the registered owner resides in

Winnipeg, within 20 km of the perimeter highway. The inconsistency of prohibiting municipal authorities from levying fees on the owners of motor vehicles was not lost on some legislators. According to the Winnipeg Tribune of April 22, 1933, in debating a hefty increase in registration fees for trucks the member for Springfield "thought the municipalities should have some control over trucks and pointed out that many of them used municipal side roads and there was no power to make them contribute by tax to the damage to the roads".

Logically, there are two major criteria for classifying motor vehicles. Economic regulation is concerned with public utility issues (adequacy, reliability, price of services) and hence with public service vehicles. The relevant criterion is whether the vehicle is operated for hire. Taxation is concerned with determining levies for the use of or the strain put on roads and highways. The relevant criterion is vehicle weight (distance or frequency of travel, which is also an indication of road use, is not related to type of vehicle). In principle, a transit bus operated by and in the City of Winnipeg is a public service vehicle just as an intercity bus operated by Grey Goose Lines; there is also no difference in principle between a transfer service operating within a radius of 20 km of Winnipeg's perimeter and a transfer service operating between Winnipeg and Selkirk. In practice, of course, the Motor Transport Board regulates intercity transport business and not the business within the city, but that does not change the nature of the business. Similarly, there is no difference in function between a carrier hauling sand and gravel and a carrier hauling lumber or petroleum products. Again, the practical difference is that the one is exempt from regulation and the other is not. These inconsistencies in P.S.V classifications would hardly merit discussion were it not for their financial consequences; in practice, the classification for regulatory purposes overlaps and conflicts with classification for taxation purposes.

To the extent that registration fees for motor vehicles are introduced as a charge or payment for the use of a public highway it should make absolutely no difference for what purpose the vehicles are used. The strain placed upon a highway by a truck with G.V.W. of 50 tonnes is the same whether the truck is licensed as P.S.V., as commercial truck, farm truck or other truck, and whether the truck carries a load of steel, gravel or grain. However, the classification system as it developed has given rise to different levels of taxation. In the early years the differences were relatively small, but they have increased over time, and they are very substantial today. For vehicles with the maximum GVW (56,251 - 56,500 kg.) the registration fees for P.S.V. and C.T. trucks are $3,521.00 per year, for other trucks $838 and for farm trucks $465. The differences give rise to questions of equity in taxation and unfair competition between various classes of carriers; they also are a powerful incentive to cheat and to find ways to circumvent the regulations.

PRESENT REGULATORY ENVIRONMENT
IN MANITOBA

JUNE, 1983

PRESENT REGULATORY ENVIRONMENT

INTRODUCTION

The present regulatory environment for the motor carrier industry consists of a complex set of laws, rules, regulations and procedures. There are a number of provincial agencies interacting with each other in the regulatory process. Commercial transportation is subject to varying levels of compliance prescribed by the Motor Vehicle Branch for vehicle registration and identification, the Department of Finance for sales tax and fuel tax, the Motor Transport Board for operating authority, and the Department of Highways and Transportation for inspection and verification of the preceding requirements at highway inspection stations.

While a large number of agencies are involved in various aspects of motor carrier activities the Motor Transport Board is the agency most often identified as the focal point of the regulatory process. The Board normally is the first point of contact for potential carriers who seek authorization to undertake various forms of transport activities. After the proper classification and/or authorization has been granted, the requirements of the other government agencies come into play. This paper, therefore, concentrates on describing the present regulatory environment in Manitoba by discussing the scope and nature of activities of the Motor Transport Board.

THE MOTOR TRANSPORT BOARD

Structure of the Board

The Motor Transport Board is comprised of a full time chairman and seven part time members, two of whom act as vice-chairman. As the Board members have varied backgrounds, each brings a different perspective to the matters presented for the Board's deliberation. The members act as a panel when they deliberate and assess not only the immediate transportation needs of shippers and carriers before them, but the needs of the general public at large.

The Board is open to all persons who feel affected by the regulatory process - a situation which creates a heavy work load for Board members and results in hearings being backlogged for considerable periods of time. To cope with the backlog, the Board plans to hold two hearings simultaneously, when sufficient members and space become available.

Usually a quorum of three members preside over each hearing. The practice of the Board has been to name a panel of at least three members to hear all applications. Routine administrative matters and unopposed applications are heard and decided by three or more members. Occasionally, one member may sit to hear an application and report the proceedings to a quorum for decision. One member hearings normally are used to decide matters in joint hearings with other provinces.

No one member of the Board, or associated staff, can make Board decisions. To accommodate a smooth and orderly transportation system, the Board has authorized designated staff members to issue temporary permits of operating authority but these must be reviewed and confirmed by the Board on a weekly basis. During the weekly meetings the Board officials explain the reasons and circumstances for each permit. The Board approves each permit on a post-audit basis, i.e., after the permits have been issued, and gives the officials advice and direction on the issuance of future temporary permits, as appropriate. This interaction with Board officials results in Board members being informed about the distribution needs that exist within and at the periphery of the regulated network. Additionally, the opportunity to usurp the Board's powers is diminished appreciably.

Appointment of Members

The members are appointed to the Motor Transport Board by the Lieutenant-Governor-in-Council. There is no restriction on length of tenure as members hold office until successors are appointed. Since members are appointed by the government in power, there is a gradual turnover or cycling of members. Historically, there have been no observed disruptions in the Board's continuity relative to changes in administrations from time to time.

New members are oriented at regular board meetings and normally all members participate in explaining the duties, powers and responsibilities of the Board. New members come to understand the role of the Board through a review of the legislation as well as a review of established practices and procedures of the Board. Since hearings require three or more members sitting as a panel, new members are able to participate and contribute to a panel's deliberation from the first hearing they attend.

Relationship with Other Departments

The Motor Transport Board reports to the Legislature through the Minister of Highways and Transportation. The Board files an annual report accounting for its activities on a year to year basis. The report is tabled in the Legislature; it is currently included with the Annual Reports of the Department of Highways and Transportation.

The Board has not developed a sophisticated internal research capability and in the past has relied extensively on research support from the Transportation Division of the Department of Highways and Transportation. The Transportation Division, formerly the Transportation Research Branch at the Department of Economic Development and Tourism, has had a continuing relationship with the Board for the past 20 years and has responded to the Board's requirement for statistical, analytical, managerial and policy oriented expertise.

The Board's involvement with other government departments generally relates to issues arising from service levels or transport capacity.

Apart from the Motor Vehicles Branch and the Highway Inspection Division of the Department of Highways and Transportation, the Board maintains contact with a number of other departments at the working level. The Departments of Agriculture, Economic Development and Tourism, and Attorney General are examples. Periodically, Board staff consult with other regulatory agencies such as the Liquor Control Commission and the Public Utilities Board.

The Board is directly involved with regulators in other provinces and has taken a positive stand on work being carried out by the Standing Committee on Motor Carriers of the Canadian Conference of Motor Transport Administrators (CCMTA). Manitoba has committed a significant amount of time, money and effort to this organization. The Province has consistently taken an active role and devoted a high priority to the work carried out by committees and working groups within the CCMTA organization.

Goals and Objectives

The Motor Transport Board has the general supervision over motor carriers and operators of public service vehicles and commercial trucks and their relations to the public, the railways and one another. The Highway Traffic Act empowers the Board to give attention to the welfare of the shipping and riding public in terms of adequate, efficient service at reasonable and just charges. Additionally, the Board has a further obligation to be attentive to the circumstances of the motor carriers in terms of carrier revenue needs, the honesty, efficiency and economy of management and the fostering of sound economic conditions for the industry.

To satisfy this mandate the Board has established the following goals and objectives for motor carrier regulation in Manitoba as outlined in its most recent budgetary estimates:

a) To maintain a developmental (as contrasted to restrictive) regulatory system for the supervision of motor carriers that protects and assists shippers and consignees of goods and that is responsive, flexible and effective as it relates to motor carriers.

b) To maintain an effective and efficient motor carrier system intraprovincially, extraprovincially, and internationally for the benefits of producers and consumers by ensuring a proper degree of competition within a regulated system.

c) To ensure that the laws, regulations, rules and policies governing motor transport in, into, out of and through Manitoba are realistic and practical, yet of sufficient substance to allow for effective enforcement when necessary.

d) To develop a provincial transport strategy to ensure that adequate and economic transportation services are available to all Manitobans.

e) To ensure that the health and viability of public carriers is maintained.

POWERS AND DUTIES

Regulatory Legislation

The Board draws its power to execute the regulatory mandate from the provincial Highway Traffic Act and from the federal Motor Vehicle Transport Act. Accordingly the Board exercises both provincial and federal jurisdiction. The delegation of federal regulatory powers has been held to mean that provinces can regulate extraprovincial carriers in a like manner to the regulation of intraprovincial carriers.

Some of the specific authority provided to the Board in the Highway Traffic Act is described below. The Board may:

a) Require every motor carrier who carries persons or property upon the highway to comply with the laws of the province, the regulations of the Board and any municipal by-law affecting the carrier or his vehicle.

b) Require every motor carrier to keep and maintain his motor vehicle and equipment in such condition as will enable him to furnish adequate, safe, sanitary and proper service.

c) Specify the routes and the nature of the routes, including the number of vehicles that may be permitted to serve any district or area.

d) Classify public service vehicles and commercial trucks and determine the proper class of each. (This may include a classification which may exempt certain carriers from regulation).

e) Fix the maximum and minimum tolls, fares or charges to be made by motor carriers for gain or compensation and the manner of recording and accounting for cash on delivery (C.O.D.) shipments.

f) Regulate and supervise operating schedules and services of motor carriers.

g) Hear and adjust complaints against motor carriers. This includes the ability to summon and examine persons.

h) Direct and supervise the kind of equipment, the type of maintenance and the method of operating public service vehicles and commercial trucks.

i) Prescribe the passenger and load capacity of public service vehicles, including weight and size limitations on package freight or other property.

j) Where necessary, require the establishment and maintenance of depots for passengers and freight at suitable locations. The Board has the authority to license and regulate the depots and allocate, amongst the motor carriers directed to use the depot, the cost and expense of erecting the building, including the costs of maintenance and supervision and require payment of those costs and expenses by such motor carriers.

k) Require the filing by motor carriers of returns, reports and other information relative to highway transportation.

l) Require all drivers of public service vehicles to furnish medical certificates of fitness to drive such vehicles. This may include driving and other fitness tests as the Board may prescribe.

m) Coordinate motor carrier services with railway services, and to that end, cooperate with any other body having federal or provincial jurisdiction, over railways or other motor carriers.

n) Generally have and exercise like powers, duties, authority and jurisdiction over motor carriers and their motor vehicles, in respect of highway transportation as are vested in the Board under the Public Utility Board Act over public utilities and their owners, including the imposition of penalties for violation of Board order.

Additionally, the Act provides that no person shall operate a public service vehicle upon a public highway without holding a certificate issued by the Motor Transport Board. As a result of a public hearing a certificate of operating authority is issued on proof that existing facilities for transportation are insufficient, or that public convenience will be advanced or promoted. The certificate is renewable annually. Further provisions state that no certificate shall be issued by the Board unless the motor carrier has filed and maintains during the currency of the certificate a liability insurance policy or bond satisfactory to the Transport Board, as well as fidelity insurance covering legal liability for funds collected for consignors.

Motor carriers operating under a certificate may not abandon or discontinue any service established without the permission of the Motor Transport Board.

Not all of these powers are currently exercised. The Board exerts a partial control over the amount of trucking services supplied through its licensing of trucking firms, but does not restrict the amount of equipment each firm is using. However, the Board has approved carrier applications to operate a specified service only with vehicles of a certain size or a certain class, e.g., "restricted to the use of motor vehicles having a gross vehicle weight of 10,000 lbs.".

Supply of service can grow as individual firms grow. The amount of service capacity will also increase as weight limits on the highways increase. Trucking associations as well as shipper interest groups have lobbied for increased highway weight limits and larger trucks would tend to reduce the number of carriers required to meet service demands unless demand for increases matches the increase in capacity. How increased weight limits affect the amount of excess capacity available in the industry has not been investigated thoroughly. The higher weight limits enable the motor carriers to lure traffic away from the railroads. The Board has not had the opportunity to examine this aspect of higher weight in the context of coordinating motor carrier services and railroad services.

Regulations and Board Orders

Further to the general control of operations described in the Highway Traffic Act, the Board has the jurisdiction to make regulations and issue Board orders.

Orders of the Board are published as regulations, under The Regulations Act, on matters having broad public interest. Amendments and publication of freight tariffs, rules and conditions of carriage, exemption of certain commodities, or types of carrier operation from provisions of the Highway Traffic Act are all handled through the Manitoba Gazette. Orders of the Board take effect one week after the date of the Manitoba Gazette in which they are published.

Board orders directing compliance with certain directives of the Board are normally restricted to the participants who are the subject of the order.

Board Orders have the same weight and effect as an order of the Court of Queen's Bench.

Appeal Process

An appeal from any final order or decision of the Motor Transport Board lies to the Court of Appeal, upon any question of jurisdiction or point of law. The appeal process is seldom used, relative to the number of cases handled by the Motor Transport Board. Applicants who are not satisfied with a decision of the Board may reapply to have their application heard after a six month waiting period.

While appeals are infrequent, the Manitoba Board has been involved in a number of precedent setting cases, usually relating to the power and jurisdiction of Boards and Commission from a Constitutional perspective.

The appeal process requires the aggrieved party to petition the Court of Appeal for leave to have the Courts review the decision of the Board. When granted, the appellant demonstrates to the Court those areas in which the Board erred in matters of jurisdiction or law, and asks the Court to nullify or set aside the objectionable decision of the Board.

The Board usually defends its position of jurisdiction or law and requests the Court to disallow the appeal. The next level of appeal is the Supreme Court of Canada.

REGULATORY CONTROLS

Hearing Process

The public hearing process is used by the Motor Transport Board to receive public input about the quantity, quality and price of transportation falling under the Board's control. With certain exceptions, every application for an operating authority is handled by the Board at a public hearing where applicants are seeking new operating authority, extension of existing operating authority or a contraction, diminution or lessening of service responsibilities previously authorized.

Applicants inform the Board of their intention to obtain or modify an operating authority. The Board responds with a confirmation of its understanding of the application, set out in the manner and style in which it will be advertised. When the carrier reconfirms the application, the matter is published in the Manitoba Gazette, the official medium for public notification.

Parties having a direct interest in the proceedings must file written notice of intent to oppose the application or otherwise participate in the hearing, within ten days from date of publication in the Manitoba Gazette. The Board notifies the applicant of the names of opposing or intervening parties.

Following the ten day notice period the Board schedules a hearing day (or dates) and notifies all parties of the time and place.

Control of Entry

In order to operate a public service vehicle, an individual must hold a certificate issued by the Motor Transport Board. The applicant faces a dual test for permission to operate as a public carrier. The first relates to insufficient transport facilities and the second relates to the promotion of public convenience from the proposed service.

The applicant must produce evidence to show that public convenience will be advanced or promoted by the service he wishes to provide - that granting an operating authority would result in an improved distribution system with the welfare of the general public being advanced.

The applicant normally proves his case by bringing shipper witnesses who attest to the necessity of the service. These shippers explain why they need the service, how they would propose to use it, the existing alternatives they have examined or employed and the probable effects on their shipping patterns and markets if the authority is granted and the effects if the authority is denied. The applicant must also demonstrate to the Board's satisfaction that he is fit, willing and able to provide the services applied for.

Criteria for fitness of an applicant carrier could include past experience in similar circumstances, the honesty and integrity of the management and the availability of the financial, human and physical resources appropriate for the successful execution of the proposed service, if authorized.

The Board conducts its hearings in the manner of a Court. While it generally follows the rules of evidence of the judicial system, the Board is not rigid in its procedural process, and permits a high degree of latitude for all participants to present their testimony. The Board seems to be more concerned with learning the views, concerns and opinions of all parties, than with Court protocol.

Exit controls are less stringently maintained. While a formal application to amend an authority requires a hearing, the Motor Transport Board does not know the extent to which a carrier is exercising its entire franchise. A shipper complaint would alert the Board to this fact. Without a shipper complaint of withdrawal of service, a common carrier could go out of business, and the Board would not be aware of it until a check for non-renewed licenses is made. This check occurs about three months into the new license year, and unrenewed licenses are subject to cancellation.

Control of Pricing

Rate control falls into two distinct categories in Manitoba - intraprovincial rates being one and extraprovincial rates being the other. The Motor Transport Board approves the rates, fares, charges and general tariffs of tolls for all intercity carriers within the Board's jurisdiction who operate on an intraprovincial basis. Such is not the case extraprovincially.

In August 1954, the Motor Vehicle Transport Act was proclaimed in Manitoba and the Motor Transport Board sat as a Federal Board. However, at an interprovincial trucking conference, called by Manitoba Premier D.L. Campbell, and attended by eight of ten provinces, it was resolved that extraprovincial truck freight rates "be not controlled". That policy on control over interprovincial truck rates remains unchanged. Manitoba recently considered instituting interprovincial rate control as a possible option in attempting to resolve the issue of exempting tariff bureaux activities from prosecution under the Combines Investigation Act.

Intraprovincial transportation related tolls have been controlled by government since the early 1930's when the Province enacted legislation to regulate all transportation enterprises. The first tariff of tolls for truck operators went into effect on May 1, 1931.

General Rate Stability

The normal practice of the regulatory agencies, until the mid 1960's was to accept and approve the tariffs as filed by the carriers. During the period from 1934 to 1966, there were four rate changes for general freight carriers. The 1934 scale of class rates was increased by 12%

in 1948 and then re-issued as a 28% increase in 1951. The 1951 schedule was increased by 15% in 1957. The next increase occurred in 1966 where the concept of 30,000 and 40,000 pound truck load rates (classes 45 and 40) were introduced into the rate schedule.

In 1968 the then Highway Traffic and Motor Transport Board initiated two hearings to receive public response to a "simplified price structure" proposed by the Board. The Board had tentatively scheduled the new tariff to come into effect on January 1, 1969. However, the Transportation Minister directed the Board to hold six further hearings throughout the Province into the matter of contemplated changes. As a result of these hearings the Board's proposed rate concept was abandoned and was not introduced as a pricing mechanism until April 1973.

Value of Service Versus Cost of Service

During the period 1968 to 1973 there were four rate adjustments to the tariff. These adjustments were the beginning of a gradual transition from a value of service class rate structure toward a more pronounced cost of service rate structure. The rate structure was designed to imitate theoretical cost functions, such that fixed costs would be weight dependent and variable costs would be weight and distance dependent.

Numerous special studies have been undertaken to develop apportionment factors for distributing average costs to various sized shipments moving various distances. While these studies have been very useful in creating and modifying rate structures, they are no more than general guides. Under any cost allocation scheme, even the most logical allocation is still subjective.

Pricing Criteria

There are a number of elements which are examined by the Board in the review of a request for a rate revision. Some of these underlying tenets follow.

1. The rate structure is an important factor in any transportation system. The price of transportation determines the structure, the conduct and performance of each sub-industry in the transport sector.

2. Rates and fares should be just and reasonable and can best be determined by good judgement and fairness, common sense and a sense of justice to the facts of record.

3. Rates voluntarily established between consenting parties are presumed to be reasonable and, with some exceptions, are normally approved as requested.

4. A cost study is not an exact science. Therefore, cost studies cannot be the sole test of a rate's reasonableness.

5. Rates and fares have a relatively high degree of inherent stability. Shippers and carriers should be protected from wide sweeping changes which oscillate between extremes with each revision to a rate structure.

6. As rates are a function of weight and distance, the rates should progress uniformly and consistently throughout the schedule.

7. A rate structure should be simple to understand and use by anyone.

Intraprovincial rate making takes place within the general framework described above. While all of these elements may not be addressed specifically for each occurrence of the Board's review process of intraprovincial rates, it is useful to describe this background.

It may also be informative to examine the preceding principles in the context of economic theory. From the perspective of an economist, the most striking deviation from economic principles in the criteria used by the Board are the references to justice and fairness which are ethical concepts. Reasonable is another adjective used, but this is not defined. In economics, the sole test of reasonableness is whether the rate covers the marginal cost of the service assuming full distribution of costs. Justice and fairness have no bearing on deciding what is the correct price. Economists recognize that in reality it is extremely difficult if not impossible to determine the marginal cost of any service. They have conceded that using the average variable cost of service is a second best alternative where variable means costs attributable to the traffic carried. However, the Motor Transport Board only uses the costing exercise as a guide to establishing general rate levels and does not use a costing model to determine specific costs for specific commodity movements.

The Board generally accepts rates voluntarily negotiated by consenting parties as reasonable. Such negotiations must involve the parties' bargaining power, absent from a perfectly competitive market. One may assume the Board is alert to large imbalances in bargaining power between shipper or carrier in arriving at an agreement. Nevertheless, any amount of bargaining power leads to some deviation from the ideal market rate.

Rates voluntarily negotiated by consenting parties should always be published. Secret rates are anti-competitive. Restricting rates on similar services to selected parties is in the interest of the carrier and obtaining a preferred rate over a competitor is in the interest of the shipper. This discriminating behaviour denies all carriers and shippers the benefits of competition. Shippers outside the agreement who purchase a similar service have the right to request similar rates. Carriers outside the agreement have the right to find ways of offering the same service at the same rate.

The objective of having rates progress uniformly and consistently throughout the schedule has an appealing logic in general. However, costs may not progress uniformly and consistently as weight or distance increase.

The Board values stability in its rate structure. Shippers and carriers would also value stability in rates and fares since this permits easier planning by reducing uncertainty. From an economic perspective, price flexibility plays an important role in signalling that adjustments to excess capacity and shortages in the supply of services are necessary. This is another aspect which must be considered when evaluating how well price prescription simulates the working of the competitive market.

REGULATORY DIFFERENCES

Freight Rates and Tariffs

Intraprovincial carriers must submit applications for Board approval of rate changes. These applications are made on an individual carrier basis as well as at an Association level for an industry-wide change. Under each situation the carrier(s) must prove the necessity of the rate variation, regardless of whether the direction of the change is an increase or a decrease.

Interprovincial carriers have no such burden. They are able to revise their tariffs at will. Some carriers publish their rates jointly through tariff bureaux while others publish their own tariffs independently.

International carriers must submit tariffs for approval by the Interstate Commerce Commission (ICC) for all traffic moving in interstate or foreign commerce. The burden of proof lies with the carrier (or the representative tariff bureaux) to demonstrate the necessity for changes in rates. The ICC permits interested parties, both shippers and carriers, to participate through representation to the Commission.

Operating Authorities

The tests for entry are identical for all carriers seeking operating authority for operations of an intraprovincial, interprovincial or international nature. The duties and obligations of public carriers operating within territorial divisions are all identical. There is no distinction between carriers based on area(s) of operation. The major exception in responsibilities of intraprovincial vis-a-vis extraprovincial carriers is in the area of freight tariffs.

Exemptions from Regulation

Exemptions from regulation are few. Exemptions are accorded vehicles transporting gravel, sand or other material for use in the construction or maintenance of public highways.

Not many commodities can be moved on an exempt basis. The primary (first) movement of fruits and vegetables as well as farmer's grain are the only commodities of a broad general nature not requiring operating authority. Although there are other commodity exemptions in the regulations the circumstances in which the exemptions are operative are fairly restrictive.

Temporary Authority

Temporary trip authority may be issued to a non-authorized carrier when the authorized carriers on the route are unable to satisfy transport demand for lack of sufficient or suitable equipment. Annual seasonal peaks occur in the movement of livestock, fertilizer and propane gas. The Board temporarily authorizes additional carriers on a trip by trip basis to handle peaks and surges of seasonal commodities.

Temporary authority is extended to corridor carriers who are operating through Manitoba on a "closed door" basis, meaning carriers may not pick up or deliver freight in Manitoba. These carriers are advised to apply to the Board for permanent corridor authority.

During national railway strikes existing P.S.V. carriers have been given temporary authority to broaden their scope of operation. Similarly under emergency situations, due to extreme regional shortages of hay or animal feed or the like, carriers of a certain class or nature will be permitted to transport specified commodities until conditions stabilize. The authority usually is granted through a Board directive by announcement to the industry.

ENFORCEMENT

Motor carrier activities are monitored on-highway by Department of Highways and Transportation weight scale inspectors and off-highway by departmental and Board inspectors.

On-Highway Inspections

Highway weight scales are located at eleven permanent locations throughout the Province. These permanent inspection stations are supplemented by 22 mobile patrols.

The primary function of highway inspection stations is public safety in the broadest sense. It includes protection of the highway system from overloaded vehicles as well as public protection from improper operation of equipment with over-dimensional traffic.

The duties of highway inspectors relate to public safety and preservation of the highway infrastructure. Part of the public safety responsibility is the matter of identification and legitimacy of operation.

Highway inspectors determine the validity of driver's licenses, vehicle registrations, insurance provisions and operating authorities. Examination of carriers' operating authorities constitutes approximately 60 percent of the violations written by highway inspectors. If any or all of these requirements are in default the vehicle may be held until corrective measures are taken or a commitment received which will result in full compliance.

Off-Highway Inspections

The Board has two inspectors who regularly investigate complaints respecting violations of operating authority, improper use of license plates, freight claim disputes, unauthorized freight charges and delays in the remittance of C.O.D. funds. The inspectors investigate, interview and gather documentation and evidence for the Board to use in "show cause" hearings. Departmental staff assigned to the Highway Inspection Division also assist with Board investigative matters. The Board draws on these field personnel as appropriate. The chief inspector meets regularly with the Board on compliance matters.

The Court Process

The Courts are seldom used by the Board to prosecute violations of operating authority or breaches of other regulatory controls. However, the Highway Inspection Division makes extensive use of the Courts for breaches of weight laws, safety provisions and licensing requirements.

Convictions of carriers operating without authority may result in fines ranging from a minimum of $200 to $1,000 for a first offence, up to $1,000 maximum for a second or subsequent conviction.

Administrative Sanctions

An effective method for handling breaches of the Board's regulatory provisions is directing carriers to appear before the Board, with respect to unauthorized activities. The carrier is given an opportunity to explain those activities and in the process must "show cause" why his operating authority should not be suspended, altered or revoked by the Board.

In addition to the imposition of sanctions related to operating authority, the Board may assign costs arising from show cause hearings.

The Board uses administrative sanctions with discretion. It is a more direct and effective method of securing regulatory compliance from the industry than through the Court system.

SUMMARY

The environment in which the present motor carrier industry exists was described on the basis of the structure and activities of the Motor Transport Board. The structure of the Board, its membership and relationships with other government agencies was reviewed. The powers and duties of the Board were outlined as part of the present legislation authorizing the regulatory process.

The hearing process accounts for a major part of the Board's activities. Public hearings have strict notification requirements, and therefore a brief account of the process was included. Most hearings relate to control of entry or pricing and these activities were described with reference to criteria used to decide entry and pricing issues.

Differences and exemptions from normal regulatory practises were discussed as they pertain to freight rates, tariffs and operating authorities.

The section concludes with a sketch of enforcement issues. The procedures carried out at highway inspection stations as well as from carriers' and shippers' records describes the general focus of inspections undertaken by departmental and Board officials. The Courts and the Board's administrative powers are employed to ensure compliance with the law.

The present environment for motor carrier activities in Manitoba is controlled by the Motor Transport Board. The Board regulates carriers on the basis of the Highway Traffic Act. Consequently, the regulatory process tends to be legalistic and complex to those not in frequent contact with various levels of government regulation.

REVIEW OF MOTOR CARRIER CHANGES IN OTHER JURISDICTIONS

JUNE, 1983

JURISDICTIONAL REVIEW OF MOTOR CARRIER CHANGES

Motor carrier regulation throughout Canada is in a state of flux. Streamlining the regulatory process and reducing the burden of regulation is a goal being pursued from one jurisdiction to another. This flurry of activity toward changing motor carrier regulation began within the past five years when both Alberta and Ontario appointed select committees of the Legislature to inquire into the regulatory process. While many recommendations arose as a result of these two inquiries, each jurisdiction concluded that it would maintain the status quo.

Ontario instituted a second examination in 1981. However, Ontario's second inquiry went beyond merely addressing the mechanics of regulation, and concentrated on examining the underlying principles of regulation. A final report will be available this year.

Within the past five years the entire regulated transport sector in the United States has been changed, commencing with the deregulation of the airline industry. The United States Motor Carrier Act of 1980 eased entry into the regulated sector of freight transportation. More recently, legislative changes were enacted to ease the burden of regulation on both the rail and bus modes.

As of February 1983, each jurisdiction in Canada was actively reviewing current transport legislation. A number of these reviews are formal in the sense that they include participation by the public. Others were merely internal reviews aimed at streamlining the regulatory process and reducing the burden of regulation. A description of each jurisdiction's review process follows:

British Columbia

Freight forwarders in B.C. have attempted to provide truck service to destination points throughout B.C. on traffic consolidated for various shippers. This activity has caused concern to the regulated carriers and the Motor Carrier Commission. The Commission held a public hearing on this matter. A decision is expected on the ability of freight forwarders to engage directly in trucking activities with (or without) operating authority.

Alberta

In 1977, a select committee of the Legislature held 18 hearings throughout the Province of Alberta. At the conclusion of the inquiry the committee reported that no changes be instituted in government control over entry into the intraprovincial transport market. Entry into the extraprovincial market also remained unchanged insofar as requiring proof of public need. Further, the government had no role to play in rate making functions. The report recommended that a separate transport act be established to accommodate the needs of the carrier industry. The regulatory process in Alberta was streamlined to a considerable extent when a new Act, called the Motor Transport Act was passed in 1978.

Currently, Alberta has initiated a review and revision of the Motor Transport Act to repeal redundant sections, as well as to consolidate sections that are duplicated in the Highway Traffic Act. All matters of a safety nature currently spread throughout the Motor Carrier Act will be purged and transferred to the Highway Traffic Act.

In streamlining the regulatory process the overall objective is to eliminate or reduce the amount of "red tape" which is presently burdening motor carrier operators in Alberta. This would result in shrinking the process of regulation where possible thereby relieving carriers of some nonproductive activities.

Saskatchewan

The executive branch of government in Saskatchewan is concerned over public sector involvement with the general public and would like to see:

1. The regulatory burden reduced where possible; and
2. Remaining regulations become more effective.

The Highway Traffic Board in Saskatchewan is looking at a total revision of the existing legislation to reflect current and future transport needs of the 1980's.

The Traffic Board has established a dialogue with carriers, communities, and shippers to determine the type of rural less-than-truckload franchise system that best satisfies the needs of all participants. A rationalization of the industry may be necessary to improve the effectiveness of transportation in Saskatchewan.

Studies by the Board will be aimed at certain market sectors. Initially the courier sector will be examined with a view to exempting couriers from the process of regulation. The household goods, grain and fertilizer carriers are other areas requiring examination relative to government involvement in entry and rate control.

Ontario

The PCV Review Committee was formed in June 1981, with the purpose of developing principles that would form the foundation of new legislation to regulate the trucking industry in Ontario for the future. The Committee published an interim report in November 1982, entitled, "Discussion Paper on Responsible Trucking".

Although the Committee's work is not completed, the discussion paper emphasizes the need to change the entry test from public need and convenience to a fitness test. The onerous public hearing process currently required for entry into the industry should be replaced by an administrative process.

The mechanism for implementing this changed approach to motor carrier operations in Ontario has not been finalized. A final report is expected in 1983.

Quebec

On May 31 and June 1, 1982, the Province of Quebec held a "Consultation-Symposium on Highway Transportation of Goods" to develop a consensus regarding the future direction of the principles of regulation and its attendant legislation.

The Minister of Transport for the Province met with delegates from all sectors affected by the goods movement process and achieved an undertaking through the consultative process by which Quebec's future transport system would be realized.

The review settled the framework for establishing the role that each participant in the distribution system will play today and in the future. The status of public carriers, private carriers, contract carriers, owner-operators, freight forwarders, brokers, leasing companies and others, has been defined. Legislative changes are to be introduced which will allow the dynamic transportation system to achieve greater economic efficiency.

The changes will be implemented gradually so as to minimize major disruptions. The 1982 review of transport regulations in Quebec is the beginning of a series of regulatory changes aimed at simplifying the regulatory process in transportation.

New Brunswick

The Government of New Brunswick is reviewing all legislation, including the Motor Carrier Act. The Motor Carrier Act has not been changed in recent times and an updating to reflect contemporary needs appears to be required.

Prince Edward Island

The Motor Carrier Act and regulations have not been revised for the past 25 years. Currently, the province has introduced amendments to the Act to reflect legislative changes necessary for the uniform bill of lading and the attendant conditions of carriage.

The Act will require changes in the future as motor carrier legislative changes in neighbouring jurisdictions stabilizes. P.E.I. wants to be ready to implement various Canada-wide recommendations on regulatory issues involving uniformity.

Nova Scotia

A Committee has been reviewing the Nova Scotia Motor Carrier Act for the past two years. The Committee is comprised of two members of the legislature, two members of the Public Utilities Board, three members from the trucking industry, and two transport consultants.

The Committee held hearings and compiled a paper proposing changes to the Motor Carrier Act. Changes to the Act are expected to be implemented in 1984.

Newfoundland

The province is contemplating a review of motor carrier legislation. Details on the scope or direction of the changes to transport legislation have not been finalized.

Northwest Territories

The Highway Transport Board changed its reporting relationship to a new Minister on July 1, 1982. The current legislation was reported to be under extensive review with changes expected in the near future.

Yukon Territories

The Transport Public Utilities Board is responsible for motor transport activities in the Yukon. While there was no evidence of legislative changes respecting motor transport activities, there have been some organizational changes in the area of motor vehicle administration, weigh station operations and the policy and operational support to the Transport Public Utilities Board.

Regulation in Transition

It is evident that every jurisdiction is considering changes to transport legislation in an effort to keep pace with current transport needs. The regulatory stability of the past had been overtaken by a greater awareness for regulatory changes to the motor carrier system. An overriding concern regarding the updating process taking place in most jurisdictions is the fear that the solution of many provincial transport problems may seriously affect the free flow of goods extraprovincially. With all jurisdictions presently reviewing the manner in which they currently regulate motor carriers there is considerable opportunity for all jurisdictions to institute reforms which are contradictive to regulatory initiatives in neighbouring jurisdictions. Independent changes to the regulatory environment on a parochial basis would create the potential for seriously fragmenting the present motor carrier system. There is a fear among regulators that each jurisdiction may end up changing its legislation which would work at cross purposes with other jurisdictions. Consequently, each jurisdiction is aware of the need to coordinate and accommodate changes to motor carrier regulations in order to maintain a national transport system.

ECONOMIC REGULATION
OF THE MOTOR CARRIER INDUSTRY
IN MANITOBA: THE THEORETICAL BACKGROUND

JUNE, 1983

SUMMARY AND CONCLUSIONS

After reviewing the normative decision-making rules regarding pricing, optimum production levels and the length of time a firm can operate under conditions of temporary loss, the paper draws three major conclusions:

1. In the absence of economic regulation, the for-hire trucking industry will not become concentrated with a few, large firms serving the province since economies of scale and size are limited to a small portion of the industry and the economic barriers to entry are relatively few.
2. Nevertheless, as a result of the division of the total market, the for-hire trucking industry structure could be described as monopolistic competition insofar as the companies involved function within a regulatory framework.
3. The ease of entry of new firms into the trucking industry, coupled with the low rate of exit of firms, can result in a diminution of each firm's share of the market amounting, in effect, to "destructive" competition.

These conclusions were prepared following a review and description of various types of industry market structure such as perfect competition, monopoly, oligopoly and monopolistic competition. The analysis also includes an examination of the principles involved in setting rates in the transportation industry given the difficulty of fully distributing costs among various services performed.

The paper also examines the degree to which the trucking industry is affected by economies of scale and describes the conditions under which society could benefit from the integration of trucking services by a non-trucking firm.

INTRODUCTION

The motor carrier industry within Manitoba is characterized by private firms operating under provincial government controls. The primary economic controls upon the for-hire or public service carriers exercised by the provincial government through the Motor Transport Board include entry and exit control, rate prescription for intraprovincial carriers, and definition of the market to be served by each for-hire carrier as described in operating authorities. Private carriers are restricted to carrying goods without compensation. Besides carrying their own goods, owners of farm trucks can carry agricultural produce for another farmer from farm to the initial marketing point for compensation. A fourth classification, local carriers, are either for-hire or private carriers and their activities are restricted to a specified radius of their home community except for commodities exempted from regulation.

The paper describes the arguments for and against regulation.

Those opposed to it argue that regulation renders the motor carrier industry less competitive thereby resulting in higher rates to shippers, poorer service and less innovation. This has led to shippers establishing private trucking fleets which are underused and often uneconomical - a waste of scarce resources. Deregulation, they argue, would result in the industry moving towards the ideal goal of perfect competition.

Those in favor of regulation argue that deregulation would lead to destructive competition. True, rates would be lowered but to such an extent that many firms would go bankrupt as revenues fell below costs. The surviving firms would have to economize on service and reduce or eliminate needed long-term investments which, in turn, would prevent the introduction of innovation.

In its examination of the two sides of this issue, the review describes both the purposes and results of specific regulatory tools and discusses the applied economics behind the rate making practices of the transportation industry.

THEORETICAL BACKGROUND

Transportation services are unique from many other services in that they are not normally wanted for themselves. The demand for the transportation services are derived from the demand for the goods at the destination location. As a derived demand, the level of transportation services demanded from a motor carrier is not only affected by the action of competitors offering the same service, but also the demand for the goods at the destination point.

The motor carrier industry includes firms that produce services for sale to others, and firms that produce services for themselves. The four major licence categories for trucks consist of:

1. Common carriers selling trucking services to others.
2. Commercial carriers who produce trucking services for themselves.
3. Farm carriers who mostly produce trucking services for themselves, but can sell trucking services to others.
4. "Other" carriers who can do either.

The first section will describe market structures from perfect competition to monopoly. The next section will deal with two issues often discussed in the debate about regulation of the motor carrier industry:

1. Economies of scale within the motor carrier industry;
2. Destructive competition.

MARKET STRUCTURE

Perfect Competition

In economic theory, the ideal structure of an industry is called perfect competition. The principal criteria for perfect competition in the motor carrier industry would be:

1. Many firms selling a uniform service to many buyers;
2. No financial or technological barriers to entry or exit of firms;
3. Buyers and sellers completely knowledgeable about the service.

Economists define the word 'many' to mean each firm offers an insignificant fraction of the total service sold in the market and each buyer would purchase an insignificant fraction of the total services bought in the market. This ensures that no single party could control the price at which the service is sold. Bargaining power would be non-existent. Price would be determined by the interaction of supply and demand. No seller could change the price by altering production levels.

Prices would fluctuate whenever a shortage or surplus of services existed. If a seller arbitrarily increased his price when no shortage existed, all his customers could leave him for other sellers; if he arbitrarily decreased his price, other sellers would not have to follow because they would be able to sell all they could at the higher price. Individual adjustments in price and quantity would only be followed when a surplus or shortage exists in the total market. All firms would be price takers. This situation requires that all prices offered be public knowledge.

Price also equals the additional or marginal revenue earned on every unit of service sold. If each firm acts as a profit maximizer, it would offer a level of service such that the additional or marginal cost of producing the last unit of service is equal to its marginal revenue (the market price). With every firm doing this, buyers would pay exactly what it costs to produce the service purchased.

Internally, each firm would choose production techniques that minimize the cost of producing any level of services. If the industry was perfectly competitive, the owners of all resources used (labour, capital, equipment, etc.) would be paid the value of the contribution of their resources to production.

These principles are illustrated in Figure 1. The diagram shows the relationship between price or average revenue, marginal revenue, marginal cost and average cost as the quantity of service offered increases (horizontal axis). The money values are shown on the vertical axis. The average revenue curve is a flat line illustrating that price will not change no matter how many units the firm sells. Marginal revenue equals average revenue. The marginal cost curve illustrates the cost of producing each additional unit, while the average cost curve shows the total cost divided by all the units produced. The marginal cost curve intersects the average cost curve at the latter's minimum point. If the price is P_1, it also intersects that point. Since P_1 equals marginal revenue, the profit maximizing level of production occurs at that point and is indicated as Q_1. Average revenue equals average cost. This does not mean the firm

Figure 1

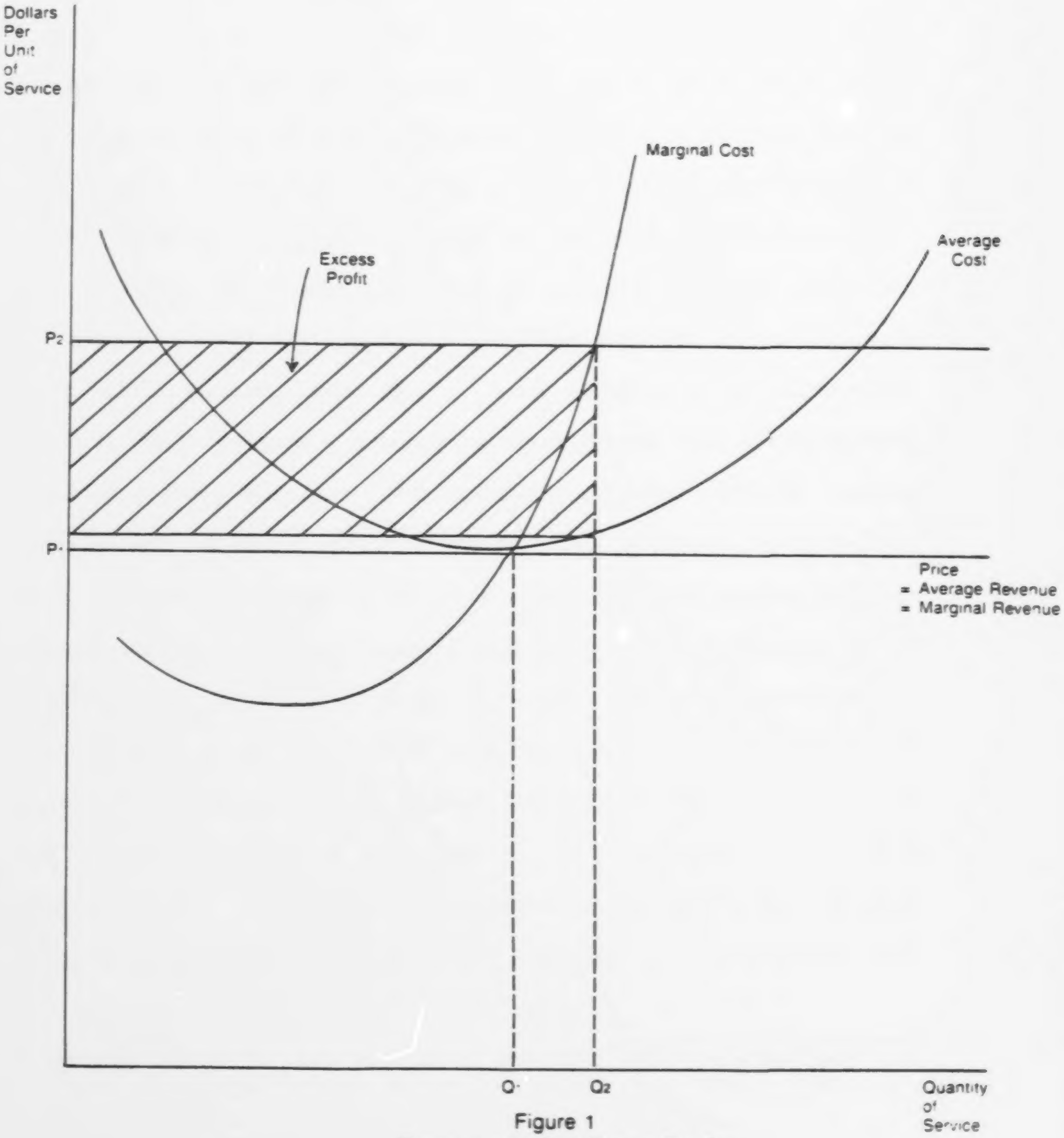
Dollars Per Unit of Service
Marginal Cost
Excess Profit
Average Cost
P2
P1
Price
= Average Revenue
= Marginal Revenue
Q1
Q2
Quantity of Service

Figure 1
Revenue and Cost Curves For A
Firm Under Perfect Competition

earns no profit.

Profit is the return that owners of the firm receive for the capital they have invested in the firm. The return necessary for the owners to keep their capital invested in the firm is incorporated into the cost curves.

A firm incurs losses if the market price is less than the average total cost of production, as illustrated in Figure 2 by P_2 or P_3. The firm has a choice of continuing to produce or to cease operations. Its total costs of production can be separated into two components - fixed costs that are independent of how much is produced, and variable costs that will change with the level of production. If the firm closes its operations, it will still incur a loss equal to the fixed cost. Average total cost also has two components - average fixed cost and average variable cost. The average total cost and average variable cost curve of a hypothetical firm are shown in Figure 2. The vertical distance between them represents the average fixed cost. Market price P_1 is the break-even price - average costs equal average revenues and no excess profits exist. Market price P_2 is below the average total costs, but above the average variable cost at the loss-minimizing level of output, Q_2. The firm's total revenues are represented by rectangle P_2CQ_20 (1). The firm's total costs are the rectangle ABQ_20. The variable costs are the rectangle EDQ_20, and the fixed costs are ABDE. With revenues P_2CQ_20, the firm can cover its entire variable costs

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(1) The area of that rectangle is the dollar value per unit sold (OP_1) times the number of units sold (OQ).

Figure 2

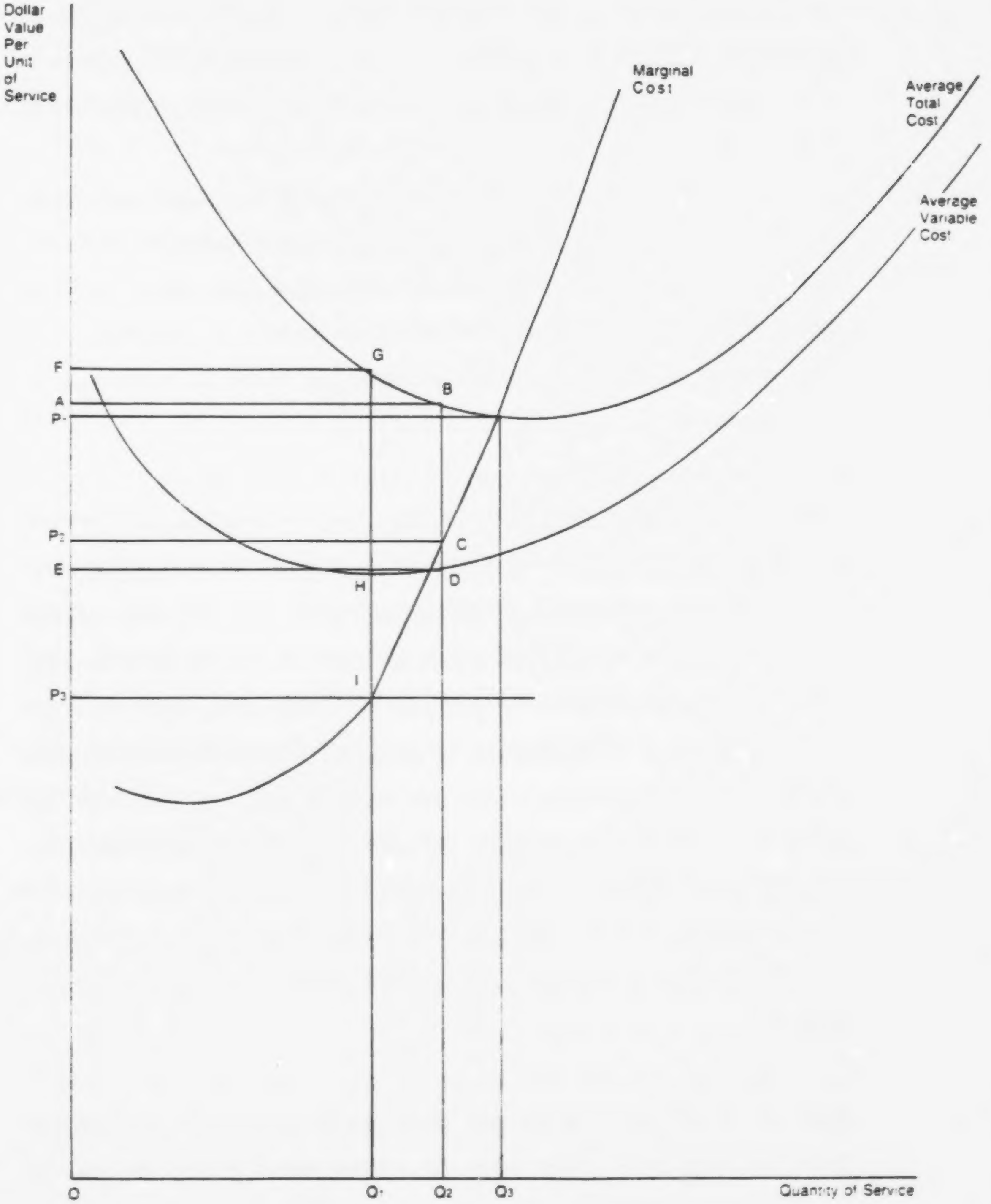


Figure 2
Deciding To Operate With Short-Term Loss or Close The Firm

and part of its fixed cost of production (P_2 CDE). It loses an amount illustrated by the rectangle ABCP_2. If the firm closed, it would lose ABDE which is greater. It will thus minimize its loss by remaining in business temporarily, while price is below average total cost, although not indefinitely.

If the market price is less than its average variable cost (P_3), the firm's total revenues (P_3IQ_30) are less than the total variable costs EHQ_30. The firm loses FGIP_3 if it remains in operation, but only FGHE if it closes. It can minimize its losses by shutting down its operation.

Firms in an industry can have different cost structures, i.e. produce the same level of service at different costs. Firms with higher cost structures are considered inefficient relative to the rest of the industry. A firm may be inefficient technically because the available resources are not used in a manner that achieves the lowest cost per unit of output. A motor carrier ignoring techniques and equipment that permit fuel conservation would be an example. A firm may be technically efficient making the best use of the resources available, but have less resources available than rivals. If these rivals are utilizing their greater resources to produce services at a lower cost, then the firm is economically inefficient relative to the rest of the industry.

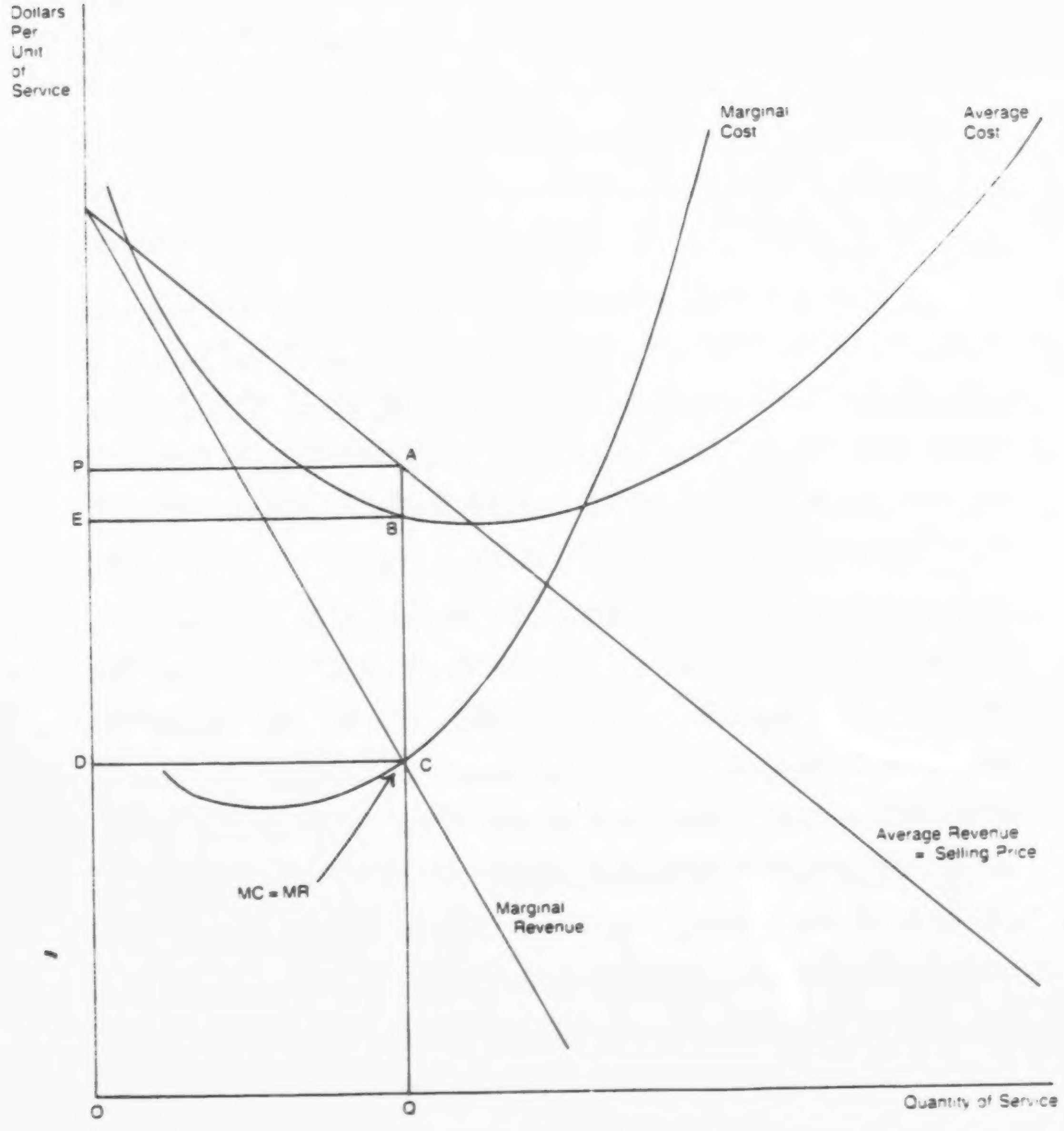
When the market price decreases, these inefficient firms will be the first for which price falls below the average variable cost and will be forced to close. With their closure, the supply of services to the market will be reduced, and the price will recover to a level where the remaining firms' average total cost is covered and losses eliminated. Firms must be able to exit the industry for this adjustment to occur.

Under the situation of a decreasing market price, a firm may take actions to become more efficient and avoid the need to close, but may not be successful in doing so.

Monopoly

Monopoly ('one seller') describes a market where only one firm supplies the entire market. It can control the price at which the service is sold and has considerable bargaining power. The seller can change the market price by altering production levels. If he arbitrarily increases his price, his customers have the choice of paying the price or not buying the service. If he arbitrarily reduces his price, he may be able to increase his own sales. The monopolist sets the price for his service only limited by consumer willingness to pay for the quantity the monopolist wishes to sell. Since the demand for transportation services is a derived demand, the shippers' willingness to pay a particular freight rate depends on the impact of that rate on the selling price of the product shipped and the related consequences for sales of the product. Thus, the monopolist in a transportation industry may have less ability to change sales by rate adjustment than a monopolist in another industry selling directly to consumers. Other

Figure 3



Dollars Per Unit of Service
Marginal Cost
Average Cost
P
A
E
B
D
C
MC = MR
Marginal Revenue
Average Revenue = Selling Price
O
Q
Quantity of Service

Figure 3
Revenue And Cost Curves For Firm Under Monopoly

factors would be more significant in determining the amount of traffic between two locations.

For the monopolist, the selling price no longer equals the marginal revenue earned from selling additional units of his service. Selling to the entire market, he must reduce price to sell additional units, but unless he can discriminate among buyers, the price is reduced on all units sold, not just the additional ones (See Figure 3). Marginal revenue per unit will be less than the selling price. The monopolist continues to maximize his profits at the production level where marginal revenue equals marginal cost of production (Q). Since the selling price (OP) will be greater than the marginal revenue (OD), the monopolist receives an unearned monopoly profit, (PABE). As barriers to entry prevent more than one firm from operating in the market, the monopolist retains his unearned profit. The selling price (OP) will also be greater than the marginal cost of production (OD). Since marginal costs represent the cost of resources needed to produce the additional service, the higher selling price reflects society's willingness to buy a larger quantity than the monopolist wants to sell. The monopolist will not satisfy society's total needs. For this reason, economists regard monopoly as an unsatisfactory form of market structure.

Intermediate Forms of Market Structure

The preceding market forms represent extreme cases. Economists have also used models of intermediate forms of market structure which may closely represent real industries.

Oligopoly An oligopoly is an industry with a few sellers of one service. Each firm has a significant share of the market and can exert some control over prices. The actions of the individual oligopolist affect the market shares of its rivals. Each oligopolist pays attention to the actions of any of the others and reacts accordingly. Each oligopolist considers how his rivals will react before acting.

A variety of oligopoly models exist examining alternate pricing strategies. One general conclusion suggests that collusion or price-setting leadership of one firm is a likely result.

Monopolistic Industry A monopolistic industry may have many sellers of a generic service which has been differentiated so that each seller is perceived to sell a unique service. Each seller seeks to achieve some degree of monopoly power. Motor carriers may differentiate their services by specializing between truckload shipments and less than truckload shipments or specializing in the carriage of specific goods. Geographic separation of markets as done by regulatory definition also creates unique services. The services of the motor carrier industry are not uniform but heterogeneous.

Under monopolistic competition, each firm faces a downward sloping demand curve with a separate marginal revenue curve (see Figure 4). The demand curve might be one represented by d_1d_1 (with associated marginal revenue curve MR_1.) In this instance, the firm would earn a monopoly profit since the selling price (P_1) exceeds the average cost at the profit-maximizing level of production (Q_1). The competition of rivals might cause a loss in sales shifting the demand curve to d_2d_2 (with associated marginal revenue curve MR_2.) The demand curve is tangent to the average cost curve; the price (P_2) equals average cost and no monopoly profit is earned. The level of production for the firm, Q_2, is not the optimum level. The optimum level of production is Q_0 where the average cost of production is lowest and equal to P_0. The firm cannot produce at its optimum level of production because it cannot sell that quantity at P_0 if the market demand curve is d_2d_2. Quantity Q_0 could only be sold at a price that is less than average cost. In monopolistic competition, each firm produces at a less than optimum level of production, and users of the service produced pay a higher price than would be optimum. The firm's market is too small relative to the size of the firm.

Multiple Product Pricing

The motor carrier industry does not produce varying quantities of a single service, but produces an enormous quantity of different services with unique characteristics that lead to different costs of production for each service. Pickup and delivery of less than truckload shipments, door-to-door truckload shipments, service between specific

Figure 4

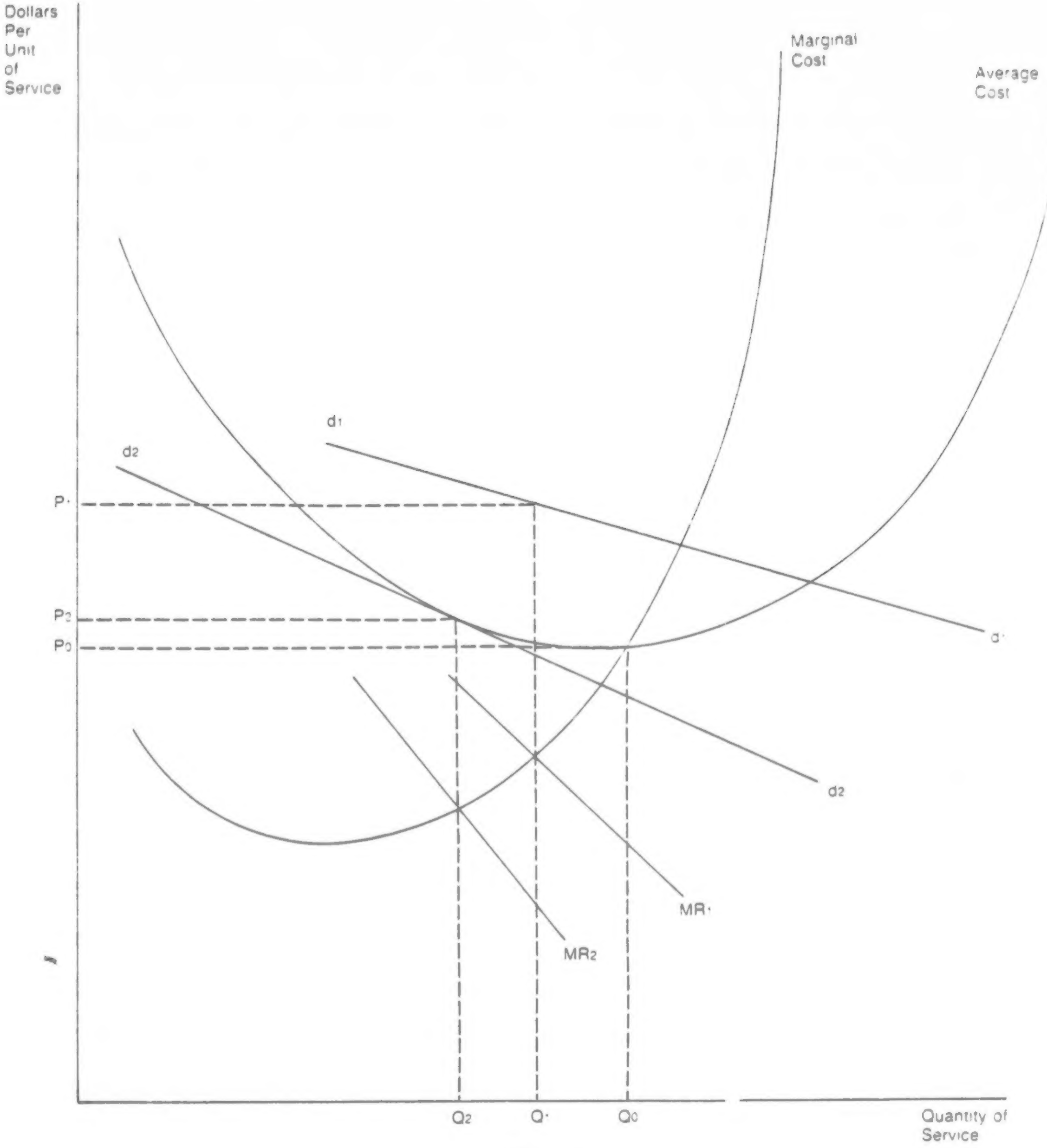


Figure 4
Monopolistic Competition

pairs of communities, service over irregular or regular routes, short-haul and long-haul are distinctive types of service. Additionally, the commodities carried have characteristics (weight, volume, fragility, explosiveness, etc.) which make their shipment unique. In an unrestricted market, each individual motor carrier can choose to produce any one of these unique services or not without the same costs and time delays involved in changing product lines in a goods producing firm.

The pricing of multiple products based on cost of production becomes a problem because the existence of joint and common costs prevents the identification of the individual costs of production for each product[2]. Joint costs are those costs that are incurred for more than one type of service because a technical relationship exists between the types of service. The classic example of joint costs is the front-haul and back-haul service. When a motor carrier based at point A and serving point B produces a service from A to B, it also produces the service from B to A because the truck must return to its origin. Common costs are those costs incurred for more than one type of service, but the commonness is not due to technical reasons. An example of common costs would be the salaries of mechanics who maintain the truck fleet. The problem for the motor carrier is allocating the common and joint costs among the different services so it can appropriately price all the services produced and quote a rate to a prospective customer.

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2. Standard economic theory assumes costs can be fully distributed.

The problem is complicated by the vast number of different services and because cost information available will be based on historic traffic patterns and shares, while the pricing must reflect current traffic patterns and shares. Since these change continually, the rules that may be derived for distributing costs may be valid for too short a time. Historic data for irregular shipments may be inappropriate for setting the rules for distributing common and joint costs among different services. Historic data may not help when the motor carrier is asked to price a completely new service.

Transportation economists have redefined the term 'variable cost' to mean the cost that can be identified with the particular service. The term 'fixed cost' has been redefined to mean the cost that cannot be identified with any particular service. (Fixed and variable costs in the standard economic meaning are differentiated according to the time period one is considering. All costs become variable if the time period is long enough.)

In applied transportation economics, fully distributing costs among the various services is regarded as impossible.

As a result, freight rates are not entirely cost-based, and a set of rate-making rules unlike that prescribed by standard economic theory is employed. First, the average variable cost for providing a service is the minimum rate to be charged. Each service pays for those costs that can be attributed to it. However, a transportation firm cannot recover its expenses by charging the minimum rate for all commodities.

Therefore the second rule: the rates should be set above the average variable cost at a level where the traffic makes the greatest contribution to fixed costs. In fulfilling this second rule, the carrier must be concerned not only with the contribution to fixed costs per unit shipped, but also the volume of traffic carried. The maximum rate charged is limited by demand factors for the traffic. The maximum rate has been called the 'value of service'. Since it has often meant a rate above which there would be no traffic, the phrase 'charging what the traffic will bear' is often used to describe the process.

Rates set under this process may be above, below or equal to those set if fully distributed costs were possible. The long-run survival of a motor carrier requires that all rates cannot be below the fully distributed costs. As long as price competition exists among carriers, all rates cannot be above the fully distributed costs, in the long-run. A mixture of rates above and below the fully distributed costs will exist and transportation economists rationalize them for the following reasons. Rates above fully distributed costs are needed to earn necessary revenues foregone on traffic paying rates below fully distributed costs. Rates below fully distributed costs are acceptable where:

1. The reduced rate is necessary to obtain the traffic;
2. Unused capacity exists with no alternative use;
3. The reduced rate covers variable costs and makes some contribution to the fixed costs.

In making some contribution to the fixed costs, the traffic is partially removing the burden of covering that amount of fixed costs from all other commodities. If the traffic was not carried, then the remaining traffic would have to cover a bigger share of the fixed costs and their fully distributed costs would be greater. Where excess capacity exists, additional volumes carried reduces the average fixed cost per unit.

This type of pricing is known either as discriminating or differential pricing. Sellers may discriminate among buyers who may be purchasing similar services according to their ability to pay or other conditions of demand. Different rates can exist for a similar service or the same rate for different services. Market separation is necessary for this type of pricing to operate.

This rate-setting process leads to an enormous amount of rates to be calculated. In practical terms, the calculation of rates for all possible services that could be offered would prove costly and onerous to individual firms. Calculating rates to reflect fully distributed costs, average or marginal would be even more difficult. Historically, the motor carrier industry first adopted the railway tariff system to price commodity movements. From this came the formation of independent tariff bureaux by motor carriers to determine and publish rate schedules.

Economies of Scale and Size

The concept of economies of scale refers to the relationship between changes in the quantity of services produced and changes in the amount of inputs used in the productive process when all inputs are increased by the same factor. Economies of size refer to the relationship between changes in the quantity of services produced and changes in the amount of inputs used in the productive process when most, but not necessarily all, inputs are increased by any factor.

Increasing economies of scale refers to a situation when the quantity of service increases by a greater factor than that by which the amount of inputs is increased. For example, the quantity of service may triple when the quantity of inputs is doubled. In this situation, the average cost of production will decrease.

Constant economies of scale refers to a situation when the quantity of service increases by the same factor as that by which the amount of inputs is increased. For example, the quantity of service may double when the quantity of inputs is doubled. In this situation, the average cost of production will remain constant.

Decreasing economies of scale refers to a situation when the quantity of service increases by a smaller factor than the one by which the amount of inputs is increased. For example, the quantity of product may increase by half when the quantity of inputs is doubled. In this situation, the average cost of production will increase.

Increasing, constant, or decreasing economies of size will similarly refer to situations where an increasing size leads to decreasing, constant, or increasing average costs.

Economic theory expects a firm to experience increasing, constant and decreasing economies of scale or size as it increases production. The level of production at which a firm passes from one stage to the next depends on the technology of the particular industry. When a firm reaches the stage of decreasing economies of scale or size and increasing average costs, it will approach a limit to its size of operation. Expansion of the firm or merger of two or more firms in this category would be inappropriate because the new firm would produce higher output at a higher average cost and be at a competitive disadvantage. In a perfectly competitive industry, firms reach the stage of decreasing returns before they have a significant share of the market, insuring that no firm could become large enough to become more dominant than any other.

If the technology of an industry is such that a firm could supply the entire market and still be within the stage of increasing returns to scale or size, the industry is a 'natural monopoly'. The merger of all firms or the elimination of all but one firm through competition in this industry would be appropriate because the new firm could produce the entire amount to supply the market at the lowest average cost. Thus, the market would be served best by a single firm. To control the negative features of a 'natural monopoly', economists will recommend that the firm be operated as a public enterprise or be regulated by government.

The cost structure of such an industry would be one where the fixed cost component is a very large fraction of the total cost. The decrease in average fixed cost as sales increase is greater than any increase in average variable costs and average total costs decrease throughout the range of output levels. In the transportation industry, the railway mode is considered the more likely example because railroad companies own and operate their own railways, which require large investment expenditures. Motor carriers use highways and roads provided by public investment so that element of fixed cost is not present.

Hirschhorn reviewed a number of economic studies examining the issue of economies of scale for the Economic Council of Canada[3]. He reported that studies of the U.S. industry suggested that economies of scale were insignificant for less than truckload (LTL) carriers and non-existent for truckload (TL) carriers. Hirschhorn indicated that three studies yielded evidence of economies of scale in the Canadian industry. The difference in these findings may be explained by the smaller size of Canadian firms in general, and because the research only examined intraprovincial firms to test for differences due to regulation. Smaller firms would operate at a level where economies of scale or size occur. One of the three Canadian studies, by Cairns and Kirk suggested that the economies were due to better utilization of equipment, but the other two did not support this finding. Hirschorn concludes deregulation might lead to fewer and larger firms, but thinks this might only be a problem in selected sub-markets.

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[3] Ron Hirschhorn, Trucking Regulation in Canada: A Review of the Issues, Working Paper No. 26, Economic Council of Canada (Ottawa 1981) pp. 39-47.

Destructive Competition

In the perfectly competitive model, excess capacity in an industry is corrected by falling prices. Falling prices eliminate excess capacity in two ways:

1. The quantity of services demanded will increase with reduced prices;
2. Some inefficient firms are forced to close when prices fall below their shut-down price.

Destructive competition describes a situation where decreasing prices cannot force enough firms to exit from the industry to eliminate excess capacity. Many firms in the industry continue to operate for a prolonged period with prices below average total costs, but not below the shut-down point (price - average variable cost). This situation is illustrated in Figure 2 above when the price is P_2. Since the industry consists of many relatively small firms, each does not recognize the collective problem nor is it possible for them to organize and exert self control to eliminate the excess capacity. In Figure 2 (page 9), Q_1 would be the full capacity level of output. When price equals P_2, the firm has unutilized capacity of Q_2Q_1.

The firms that are losing money cannot continue to do so indefinitely. They will eventually be forced out of business, but in attempting to survive, each might undertake actions that harm the interests of consumers. These actions could include reduction in the quality of services offered or postponing expenditures such as maintenance and repair work, which will hurt consumers in the future.

In a number of reports, for-hire carrier industry spokesmen have indicated that a dynamic wave effect occurs. Marginal companies fail, but are replaced by new entrants. Excess capacity is not eliminated. Marginal companies, including many of the new entrants, continue to fail, but are replaced by another group of new entrants. Successive waves of new entrants prolong the crisis. Efficient firms cannot successfully compete with the multiple waves of inefficient firms.

Economists suggest that destructive competition is plausible in an industry where variable costs are a small fraction of the total costs. The data in Table 1 illustrate how the distribution of cost between the fixed and variable cost affects the level of the shut-down price. Two cases are presented. In the first case, average variable cost, equal to the shut-down price, is a small fraction (10%) of the average total cost. The marginal cost of $1 per unit is constant. In the second case, the fixed cost component has been reduced and the marginal cost increased so that variable costs become 50% of the total costs. In both cases, the average total cost is $10, and the price may also be assumed to be $10. In case 1, the low shut-down price, $1 per unit, means small to moderate price decreases due to excess capacity would

TABLE 1

The Distribution of Costs Between Variable and Fixed Components, and The Shutdown Price

	Case 1	Case 2
Fixed Costs	$90,000	$50,000
Marginal Cost	$1 a unit	$5 a unit
Units Sold	10,000	10,000
Total Variable Cost	$10,000	$50,000
Total Cost	$100,000	$100,000
% Variable Cost of Total Cost	10%	50%
Average Total Cost	$10	$10
Average Fixed Cost	$9	$5
Average Variable Cost	$1	$5
Shutdown Price	$1	$5

result in firms operating at a loss, but no firm would have an incentive to withdraw from the industry. The price must decrease by 90% before closing a firm becomes the alternative for minimizing losses. Exit of inefficient firms from the industry would be delayed and losses to all firms prolonged because all owners individually believe that it is to their advantage to continue operating. In case 2, the average variable cost is $5 per unit implying the price must fall to $5 before the firm should cease operations. If case 2 represents trucking firms more closely than case 1 as industry observers suggest, falling prices should force out firms more readily and destructive competition is less likely.

Industry observers suggest that the characteristic of low variable costs and high fixed costs does not apply to the motor carrier industry. So, destructive competition is unlikely. However, motor carriers provide a variety of different services, and cannot fully allocate their costs in pricing these multiple services. Undistributed costs are effectively similar to fixed costs. If a high proportion of costs cannot be fully allocated, ruinous competition through maintaining rates for specific traffic at less than average costs may be possible in practice.

Furthermore, the distinction between fully distributed fixed and variable costs depends on the length of the time period under consideration. Within the duration of a recession with decreased traffic demand, most cost obligations may be non-avoidable and thus fixed.

Even if the fixed cost component was relatively low in motor carrier operations compared to other industries, the amount of money involved may be very large for the individual owner/operator of a small firm. An individual's entry into the industry may be facilitated by easy availability of credit for capital purchases. Once into the industry, that individual would become reluctant to cease operations and incur a high personal debt. This barrier to exit could also cause destructuve competition.

Destructive competition may also occur because an industry suffers from overentry of new firms. Barriers to entry are low. New entrants anticipate perceived, but unreal opportunities for profit. These perceptions may be the result of incorrect information about the state of the industry, myopic optimism about future prospects, or disbelief that failure will happen to the new entrant personally. Economic losses may force large numbers of firms to exit from the industry, but enough potential new entrants exist to buy the capital stock of exiting firms and replace their numbers. In fact, the failing companies place additional used equipment on the second-hand market, depressing the prices for used equipment and thus, lowering the barrier to entry. Excess capacity is not eliminated.

Overentry would create a particular problem in the trucking industry where demand for the product is derived because the volume of traffic between any two points is not significantly affected by the rates charged. Thus, individual carriers cannot increase the volume of traffic by reducing rates, but only increase their share of the existing traffic. Rate-cutting among carriers would not generate the additional traffic to support the number of firms in the market.

The industry structure of such an overcrowded industry resembles a monopolistic industry as illustrated in Figure 4 except a large number of firms continually face a demand curve that lies under the average cost curve. The industry cannot take corrective action to prevent this.

Commercial Trucking Industry

When a firm chooses to produce for itself a commodity or service used as an input in the production or distribution of its product instead of purchasing the input from a second firm, it is called vertical integration. A firm will vertically integrate an operation because it anticipates it can produce the input at a lower cost and have better control over that input's quality and supply. Commercial or private trucking is vertical integration of transport services by a shipper/receiver firm. The economic rationale for commercial trucking as opposed to using public service for-hire trucking is lower cost or better service.

In choosing between using for-hire trucking or operating its own trucking service, an economically rational firm would evaluate the cost of its alternatives. Comparison of the alternative costs does not always result in the proper allocation of transport resources. In considering its choice, the firm will compare the rate it might pay for a for-hire service (which can be labelled R_f) and the cost of producing that service for itself (C_p). However, for-hire rates do not necessarily equal for-hire costs of service (C_f). The following relationship thus exists:

$$R_f - C_p = (R_f - C_f) + (C_f - C_p)$$

The difference between the for-hire rate and cost of service ($R_f - C_f$) may be positive for several reasons. First, the for-hire trucking industry uses value of service pricing approach to set rates. Even rate prescription for intraprovincial trucking cannot produce a rate structure that is completely cost-based although that is a general objective. Second, rate schedules are established to vary with distance hauled and shipment weight, but the rates increase only incrementally and remain constant over given ranges of mileages and shipment weights. Since cost increases do not behave in this manner, gaps between rates and costs will occur even if rates were cost based. Rates also remain unchanged for long time periods, but costs can fluctuate with changing demand for services.

A manufacturer or distributor will opt for commercial trucking if ($R_f - C_p$) is positive. However, three distinct situations can exist when this is true. Each has different implications for the role of commercial trucking.

Case 1:

R_f = \$70 per tonne, C_f= \$60 per tonne, C_p= \$50 per tonne.

$R_f - C_p = (R_f - C_f) + (C_f - C_p)$ = (\$70-\$60) + (\$60 - \$50) =
(\$10) + (\$10) = \$20

In this case, for-hire rates are greater than private trucking costs because both for-hire rates are greater than for-hire costs and for-hire costs exceed private trucking costs. The shipper/receiver firm would be making an economically rational decision in opting for its own trucking operation. This decision is good for society because the cost of private trucking is less than the cost of for-hire trucking. For-hire trucking cannot compete with private trucking for this traffic by reducing its rates.

Case 2:

R_f= \$70 per tonne, C_f= \$50 per tonne, C_p= \$50 per tonne.

$R_f - C_p = (R_f - C_f) + (C_f - C_p)$= (\$70-\$50)+(\$50-\$50) = \$20 + 0 = \$20

In this case, for-hire rates are greater than private trucking costs, but only because for-hire rates are greater than for-hire costs. The shipper/receiver firm would opt for its own trucking operation. For-hire trucking could compete with private trucking for this traffic by reducing its rates to a level where $(R_f - C_p)$ becomes insignificant in inducing shipper/receiver firms to establish their own trucking operations. Society benefits from competition between for-hire carriers and private carriers because differences between for-hire rates and for-hire costs are minimized.

Case 3:

$R_f = \$70$ per tonne, $C_f = \$50$ per tonne, $C_p = \$55$ per tonne.

$$R_f - C_p = (R_f - C_f) + (C_f - C_p) = (\$70-\$50) + (\$50-\$55) = (\$20) + (\$-5) = \$15$$

In this case, for-hire rates are greater than private trucking costs only because the positive difference between for-hire rates and for-hire costs exceeds the negative difference between for-hire costs and private costs. The shipper/receiver firm would still opt for its own trucking operation, but this decision is not in society's interest, because private trucking costs exceed for-hire costs. For-hire carriers could eliminate private carriage by reducing their rates to the level of private trucking costs. The for-hire carriers and society in general would benefit from the elimination of private carriage in this case.

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ECONOMIC REGULATION OF THE MOTOR CARRIER INDUSTRY IN MANITOBA:

MOTOR FREIGHT CARRIER INDUSTRY STRUCTURE AND PERFORMANCE

June, 1983

Summary and Conclusions

This paper, which evaluates the structure of the motor freight carrier industry, concludes that while the common carrier industry structure and performance under the regulatory framework can be characterized as "monopolistic competition", no evidence of significant inefficiencies or "excess profits" exists. The regulations have not restricted industry activity. The industry appears dynamic, not static.

The commercial or private trucking sector is not permitted to add its cost of transporting goods to the price of those goods. In other words, the price charged at point of origin must be identical to the price charged at point of delivery. This rule may distort the economic rationale for private trucking, but evidence also exists that firms choose private trucking for non-transportation reasons. For example, the driver may also act as a salesperson and use of the firm's logo on its trucks may enhance its advertising.

Introduction

The motor freight carrier industry in Manitoba operates within the provincial Motor Transport Board's regulatory framework. The Board's objectives include maintaining a competitive and economically efficient industry. Some economists contend that regulation reduces competition and encourages economic inefficiencies.

Possible inefficiencies indicated by economic theory are assessed using available measures of performance.

The Truck Industry

Types and Numbers of Carriers - Four major classifications of licences are issued to trucks according to their use. First, public service vehicles or for-hire trucks are authorized to carry goods for compensation. The Motor Transport Board grants specific operating authorities to firms owning these trucks. Second, farm trucks are those registered by a farmer for farm use. Third, other trucks include:

1. private passenger trucks,
2. public service vehicles operated within a city, town or village or carrying exempt commodities,
3. commercial trucks operated;
    - i. by a government
    - ii. within 30 kilometres of a designated community or within 20 kilometres of Winnipeg's perimeter,
    - iii. for highway construction or maintenance, or
    - iv. carrying exempt commodities.

Fourth, commercial (or private) trucks are those that do not fall into the previous three categories.

All for-hire carriers operating within Manitoba or between Manitoba and other jurisdictions must have an operating authority granted to them by the Motor Transport Board. This specifies the geographic market which the carrier may serve, the commodities which may be carried, and any restrictions which apply. Carriers may be restricted to serving only particular companies, having certain load characteristics (such as truckload only) or using only specified equipment (such as tank type vehicles only).

As of May 29, 1981, a total of 559 for-hire carriers had Manitoba operating authorities. Of these, 180 had intra-Manitoba authority only and all but one were based in Manitoba. Of the remaining carriers, 135 had interprovincial authority only, and only 7 of these were based in Manitoba. An additional 82 carriers had only international authority with 25 of these based in Manitoba. Another 59 carriers had both intra and interprovincial authority with 46 of these being Manitoba based. Thirty-five carriers had authority to serve both the interprovincial and international markets (14 based in Manitoba). Eighteen carriers had a combined intraprovincial and international authority and all of these were based in Manitoba. Finally 50 carriers had authority to operate in all three jurisdiction areas.

The number of firms having an intra-Manitoba authority was 307. Firms having an interprovincial authority numbered 279; firms having an international authority numbered 185. While the seemingly large numbers suggests a competitive industry, geographic and other restrictions on their operations segment the markets for these for-hire carriers.

Intraprovincial Market - The impact of geographic segmentation is demonstrated in Table 5 of The Motor Carrier Industry: System Characteristics report, which lists the number of for-hire carriers serving specific Manitoba communities from either Winnipeg or Brandon[1]. The geographical segmentation of the Manitoba market is based on a hub and spoke concept with Winnipeg or Brandon as the hubs and routes to various communities as the spokes. The number of carriers serving a particular community is relatively small. Considering all freight carriers to or from Winnipeg, the maximum number is five, the average and most frequent number is two. The industry structure is apparently monopolistic.

Further restrictions on the for-hire operating authorities limit competition among the 307 licensed carriers. Ninety-three authorities (30%) specify firms for which the intraprovincial carrier can haul goods. These carriers are contract carriers for these firms. A carrier may hold a general authority and serve a specific named firm.

Other restrictions specify load characteristics, equipment to be used or not to be used and commodities which may be carried. They are summarized in Tables 3 and 4 of the System Characteristics report[2]. Such restrictions also limit competition among carriers.

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[1] Research and Planning Branch, Transportation Division, Manitoba Department of Highways and Transportation, The Motor Carrier Industry: System Characteristics (March 1983), pp. 30-32.

[2] Ibid., pp. 24-27.

Market segmentation under the existing operating authorities has created a monopolistic industry structure in the intraprovincial industry segment. Economic theory suggests the potential for excess profits and improper pricing of services.

The structure of the common carrier sector can be measured in a number of ways. Two measures are fleet size and share of total operating revenues. The distribution of for-hire carriers by the number of trucks registered in 1982 is shown in Table 1. The industry structure is one of many firms with a few trucks, and a small group of firms with very large fleets. The seven firms with the largest fleets have over 33% of the trucks registered although they are only 2.2% of the number of carriers with operating authorities. While the larger firms appear to specialize in interprovincial movements, one cannot tell from the licence plate where the truck is used most. With the advent of the Canadian Agreement on Vehicle Registrations which reduces the cost of registering vehicles in other provinces, many carriers with extraprovincial authorities are obtaining extraprovincial plates for trucks not necessarily used in extraprovincial traffic in order to have the flexibility to use these trucks if required. An intraprovincial plate would mean the vehicle is used only in intraprovincial traffic.

Table 1

Manitoba For-Hire Truck Fleets, Over 4,000 kilograms

		Number of Trucks		
Fleet Size	Number of Fleets	Intra-Manitoba (Class P1)	Extraprovincial (Class P4)	Other Types[2] (Class P3, P5 nd
1	126	85	41	0
2	60	95	23	2
3	31	44	49	0
4	20	22	58	0
5	13	18	47	0
6	18	24	81	3
7	5	6	29	0
8	2	8	8	0
9	6	0	54	0
10	6	20	40	0
11	3	11	22	0
12	5	0	60	0
13–15	5	0	64	4
16–20	6	1	107	0
21–25	6	21	114	0
26–30	2	0	58	1
31–35	2	0	67	0
36–40	1	37	0	0
Over 40	7	1	671	0
Total	324	393	1,593	10

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1. Source: Manitoba vehicle registration file, December 1982.
2. P3 - Trailers
   P5 - Intra-Manitoba drive-away
   P6 - Extraprovincial drive-away

Share of total operating revenue is another indicator of industry structure. The following data illustrate the structure of the for-hire carrier sector.

TABLE 2

Firm Size by Class[1] for Manitoba Based Carriers, 1980

	Percent of Firms	Percent of Total Operating Revenue
Class I	9.2	83.2
Class II	12.6	7.1
Class III	78.2	9.7
	100.0	100.0

Footnote:

1. Class I - firms with over $2 million in total annual operating revenues
   Class II - firms with $500,000 - $1,999,999 in total annual operating revenues
   Class III - firms with $100,000 - $499,999 in total annual operating revenues

Source: Research and Planning Branch, Transportation Division, Manitoba Department of Highways and Transportation, Manitoba Motor Carrier Industry: System Characteristics, Table 12.

These data support the fleet size information showing the concentration of the industry into a small group of large firms, and a large number of small firms. When compared to other provinces, Manitoba based Class I carriers have the largest share of total operating revenues. This is true for a four year period 1977-1980.

The System Characteristics report observes that Manitoba domiciled carriers had the highest average revenues ($1.77 million) and average expenses ($1.69 million) for all ten provinces and two territories in 1980. This is largely due to Manitoba's central location within the continent and the greater distances that must be covered in trucking operations. Also, a significant number of large national firms have located in Winnipeg.

While the regulatory environment in Manitoba has created a monopolistic market structure in the for-hire carrier sector, an examination of different measures of profitability in the for-hire carrier industry reveals that generally Manitoba domiciled carriers do not have higher rates of profit than carriers domiciled in other provinces. The data in Table 3 demonstrate this. Three measures of profitability have been calculated for freight and household movers domiciled in each province according to the class grouping of the carriers. Return on equity is net income after taxes as a fraction of owners' equity. Return on investment in transportation property is net carrier operating revenues as a fraction of the net assets. The margin of profit is net income after taxes as a fraction of total operating revenues. In general, Manitoba carriers' rates of return were in the middle of the range of values for the return on equity, and margin of profit measures. The Manitoba Class I carriers had a high return on investment in transportation property relative to other provinces, but the Class II and Class III carriers had low returns. This is likely a reflection of the dominance of Class I carriers in Manitoba.[3]

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[3] Research and Planning Branch, Transportation Division, Manitoba Department of Highways and Transportation, Manitoba Motor Carrier Industry: System Characteristics, March 1983, Table 13, p. 54.

TABLE 3

Measures of Profitability by Province of Domicile and Class of Carriers, Average for 1977-1980

	Return on Equity[1]			Return on Investment in Transportation Property[2]			Margin of Profit[3]		
Province of Domicile	Class I	Class II	Class[4] III	Class I	Class II	Class[4] III	Class I	Class II	Class III
Nfld.	0.217	0.321[6]			0.318	0.110[6]	0.157	0.010	0.011
P.E.I.	-	0.039			-	0.110[6]	0.323	-	0.001
N.S.	0.127	0.193			0.111	0.157	0.271	0.025	0.046
N.B.	5.096[5]	0.300			0.248	0.338	0.229	0.027	0.057
Quebec	-0.237	0.158			-0.079	0.170	0.231	-0.041	0.034
Ontario	0.130	0.211			0.171	0.189	0.287	0.025	0.045
Man.	0.200	0.227			0.198	0.086	0.217	0.023	0.036
Sask.	0.322	0.346			0.162	0.262	0.276	0.021	0.038
Alta.	0.212	0.270			0.174	0.196	0.243	0.040	0.041
B.C.	0.190	0.248			0.180	0.170	0.211	0.025	0.029

Footnotes:

1. Return on Equity = Net Income After Taxes/Equity
2. Return on Investment in Transportation Property = Net Carrier Operating Revenue (Net Carrier Operating Property and Current Assets - Current Liabilities)
3. Margin of Profit = Net Income After Taxes/Total Operating Revenue
4. Net income after taxes not calculated for Class III carriers
5. Unusual value is result of negative retained earnings in 1978
6. Average of 1978-1980.

Source: Statistics Canada Motor Carriers - Freight and Household Goods Movers, 53-222.

'Excess' profits may be obscured by capitalization into asset prices or dissipated into higher costs under lax management.

Interprovincial Market

Currently, 270 for-hire carriers are serving the interprovincial trucking market. The restrictions on the operating authorities limit 108 of these carriers to handling the commodities of specified firms, i.e. these are contract carriers. The commodity restrictions are tabulated in Table 4 of the System Characteristics report.
This table shows that the number of carriers permitted to carry a specific commodity range from 2 to 33 depending on the commodity. No attempt is made to systematize the points served. Some carriers may only serve Winnipeg or Brandon, others may be permitted to serve all points in Manitoba. Some authorities specify points in other jurisdictions that can be served; others may not specify the points.

International Markets

Currently, 185 for-hire carriers are serving the international trucking market. Fifty-three of these are also contract carriers hauling commodities for specified firms. The number of carriers permitted to carry a specific commodity range from 2 to 17 for the various commodities excluding the category called designated commodities.

Impact of the Regulatory Process on the For-Hire Industry

Data on the disposition of applications before the Motor Transport Board for new authorities or changes in existing ones appear in Table 4. Four fiscal years are shown. On average, about 87% of such applications were approved. The Board denied less than 5% on average, and less than 9% of all applications were either formally withdrawn by the carriers or cancelled as a result of the carriers not pursuing an approved application. This does not appear to be restrictive.

Norman Bonsor conducted a study for the Economic Council of Canada on the costs of the regulatory process.[4] Surveying carriers across Canada, he estimated that Class I and II carriers in Manitoba spent approximately $539,000 a year in regulatory costs. This is a little over one-third of one percent of operating revenues. Class III carriers and smaller carriers were estimated to have spent about $71,000 or one-fifth of one per cent of operating revenues. A large part of these expenditures are spent opposing other carriers' applications.

As a cost of regulation, these amounts are an insignificant fraction of operating revenues. They are a more significant fraction of net revenues. Using data from the System Characteristics report, the expenditures of $500,000 by Class I and II carriers would represent 4% of net revenues for the two classes in 1980. Although these regulatory costs are not a significant part of the existing revenues, observers

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[4] Norman C. Bonsor, "The Impact of Regulation on For-Hire Highway Carriers: An Analysis of the Cost Borne by Carriers in the Production of Regulatory Decisions", Working Paper No. 3, Studies of Trucking: Regulation: Vol. II, Economic Council of Canada (Ottawa 1980) pp. 1-65.

TABLE 4

Disposition of All Applications Before The Motor Transport Board

Year	1977/78		1978/79		1979/80		1980/81		TOTALS	
	#	%	#	%	#	%	#	%	#	%
Total Applications Dealt With	275	100.0	271	100.0	284	100.0	376	100.0	1206	100.0
Grants	236	85.8	227	83.8	251	88.4	331	88.0	1045	86.7
Denials	13	4.7	20	7.3	10	3.5	12	3.2	55	4.6
Withdrawals	13	4.7	14	5.2	13	4.6	27	7.2	67	5.6
Cancellations	13	4.7	10	3.7	10	3.5	6	1.6	39	3.2

might speculate on whether a deregulated system would result in a greater reduction in rates at the expense of carriers.

Bonsor did not inquire about the time delays involved in appearing before the hearings. He surveyed for-hire carriers with authorities and did not contact owner-operators without authorities who might have been intimidated by the process of obtaining them.

An analysis of the 1975-76 rate structures of various provinces by McRea and Prescott found that the two provinces that prescribed rates, Manitoba and Saskatchewan, had lower rates than the rest including Alberta where the intraprovincial trucking regulatory powers have not been utilized and a more competitive environment exists. Interprovincial comparisons of rate structures to determine the impact of regulation on freight rates have not been conclusive.

The rapid turnover of firms with large numbers of new entrants and exits is the characteristic of the motor freight carrier industry which is the basis of the concern about destructive competition. The extent of turnover under the current regulatory environment in Manitoba is measured in Table 5. The carriers are divided according to jurisdictional base. The turnover process is very dynamic. In 1977, Manitoba-based carriers numbered 332. In the years between 1977 and 1982, 105 new carriers received authorities and 112 carriers' authorities were terminated for a net decrease of 7 carriers. Only 66.3% of those carriers operating in 1977 were still operating in 1982.

TABLE 5

CHANGES IN OPERATING AUTHORITY BY BASE OF OPERATION, 1977-1982

	Carrier Base			TOTAL
Carriers[1]	Manitoba	Other Canadian Provinces	United States	All Bases
In business, 1977	332	145	44	521
Entrants 1977-1982	105	75	33	213
Exits 1977-1982	112	41	8	161
In business, 1982	325	179	69	573
In business, 1977 and 1982	220	104	36	360
% of 1977 Still in Business in 1982	66.3%	71.7%	81.8%	69.1%

Footnotes

[1] Carriers which gained operating authorities after 1977 and were dropped prior to 1982 are not counted. The figures for entrants and exits reflect the comparison of two points in time, and not all the intermediate changes.

Source: The Official Manitoba Ship by Truck Directory, 1977-78 and 1982-83.

In 1977, carriers based in other Canadian provinces numbered 145, and in 1982 they numbered 179. The net increase of 34 resulted after 75 new firms were added and 41 firms dropped. Only 77.7% of those carriers operating in 1977 were operating in 1981.

In 1977 carriers based in the United States numbered 44; in 1982 United States based carriers numbered 69. The net increase of 25 firms resulted after 33 carriers were added and 8 carriers dropped. Only 81.8% of the U.S. based carriers operating in 1977 continued to operate in 1982.

Manitoba-based carriers are examined in more detail in Table 6. In 1977, there were 221 intraprovincial only carriers in Manitoba of which 27 acquired expanded authorities by 1982 to include extraprovincial authority. One hundred and eleven carriers had intraprovincial and extraprovincial authority in 1977. Between 1977 and 1982, new entrants with intraprovincial authorities numbered 58, but exits with intraprovincial authorities numbered 86 for a net decrease of 32. Between 1977 and 1982, the carriers with combined authorities were joined by 47 entrants and 27 carriers with intraprovincial authorities only, while 26 carriers with combined authorities exited the industry. Carriers with combined authorities increased by 48.

Two hundred and twenty carriers were in business both in 1977 and 1982. Of these, 108 were intraprovincial carriers only, 85 had originally a combined authority, and 27 were carriers originally with an intraprovincial authority but obtained an extended authority. Only

TABLE 6

Changes in Operating Authority, 1977-1982
Manitoba Based Carriers

	Intraprovincial Only	Intraprovincial and Extraprovincial	Intraprovincial in 1977, Both in 1982	Total
In business, 1977	194	111	27	332
Entrants, 1977-1982	58	47	-	105
Exits, 1977-1982	86	26	-	112
In business, 1982	166	132	27	325
In business, 1977 and 1982	108	85	27	220
% of 1977 still in business in 1982	55.7	76.6	100	66.3

Source: The Official Manitoba Ship by Truck Directory, 1977-78 and 1982-83, Manitoba Trucking Association.

55.7% of the strictly intraprovincial carriers in business in 1977 were in business in 1982.

No information exists on the number of business failures among the dropouts. This would be information worth collecting.

The dramatic decrease in intraprovincial only carriers and increase in carriers with combined authorities suggests the intraprovincial markets cannot support the number of firms operating in that market only. It was not possible at this time to compare the geographic size of the markets available to each firm. Fewer strictly intraprovincial firms may mean extended markets for some of the firms currently operating.

Commercial Trucking Industry

In Manitoba currently, commercial trucks include all trucks other than public service vehicles, farm trucks, and the other truck category (T-plates). The operator-owner obtains a licence and registration from the Registrar of Motor Vehicles. On the application for the licence, the operator must indicate the nature of the proposed operations of the vehicle. Commercial trucks are not restricted in their area of operations within the Province, but must obtain an extraprovincial license for travel outside the Province.

Under current legislation, compensation for service is prohibited. This is the essential distinction in law between a commercial carrier and a for-hire carrier. The commercial carrier cannot charge a fee for service. This includes the prohibition of a delivery charge, either explicitly or implicitly in the price charged for the goods delivered. A firm must charge the same price to customers whether the firm delivers the goods to the customer or the customer picks up the goods at the firm's door. This legislation might create serious difficulties for the proper allocation of transport resources and correct decision making.

Since firms operating commercial trucks are prohibited from charging for the service either explicitly or implicitly, they are discouraged from costing their own trucking operations since they cannot recover these costs by pricing their services. Proper evaluation of their trucking operations is still possible, but an incentive is lacking. The Transportation Division of the Department of Highways and Transportation, through its physical distribution program for users of transport services has found evidence of waste of trucking resources among commercial trucking fleets. Firms participating in the program were asked if they costed their trucking operations separately. Almost all did not. Some firms had their trucking operations costed as part of the physical distribution program. Most operations generated a more costly service than could be obtained from common carriers, but the firms stated that non-transport benefits were provided through commercial carriage such as advertising the name of the firm or the drivers also functioning as service representatives or salespersons. At least one firm terminated its lease of commercial vehicles and opted to use public service carriers instead.

Allowing commercial carriers to charge for their own trucking services could encourage better utilization of trucking resources. Three kinds of commercial movement should be distinguished:

1. Completely internal movements among plant or distribution locations.
2. Pickup from suppliers.
3. Delivery to customers.

Pricing of completely internal movements will only occur in large firms organized into various divisions. Internal pricing can allow a firm to judge the relative competitiveness of individual divisions compared to external firms. A separate trucking operation is no exception. Smaller firms would not benefit from being allowed to charge internal movements if they do not price the products or services of separate operations. For these firms, the trucking operations may not appear to be significant enough to cost. The current prohibition against charging for service would not affect these smaller firms. Pricing of shipments picked up from suppliers by a commercial carrier would permit competition between the commercial carrier and any for-hire carrier used by the supplier. It may also permit competition between the commercial trucking operations of a supplier and buyer. For example, a supplier may offer a product at a delivered price using his own truck and the buyer knowing what he should charge for the trucking service may counteroffer to pick up the product at the delivered price minus the transportation charge. If the supplier's delivery charge exceeds the buyer's pickup charge, he will be offered a higher factory gate price and will not use his own truck. If the lower pickup charge reflects a lower cost of service, then the buyer's providing transport services is the better use of trucking resources.

Making a delivery charge explicit for shipments to customers would make competition for trucking services more sensitive to the price competition for the goods delivered. Shipppers would be more concerned in obtaining the trucking service that enables them to have the lowest possible delivered price at a particular market. A private carrier would have to be sensitive not only to rates charged by for-hire carriers, his rivals in the transportation sector, but also the prices charged by his rivals in the non-transport area who use for-hire carriers. Market competition between sellers of commodities could limit freight rates.

A shipper/receiver chooses to integrate a trucking service for both cost and service advantages. Commercial carriers may be able to achieve lower costs if they have specialized equipment requirements which cannot be used conveniently for general traffic. A common carrier may not be able to utilize specialized equipment fully in the specific traffic movement, and thus have higher costs if he tries to carry the traffic. They might be able to better synchronize shipments having ownership of the traffic and route flexibility, thus better utilizing equipment. Commercial carriers may also benefit from improved speed of delivery, reliability of service, and less damage due to extra care of freight. They might prefer commercial carriage in order to control delivery times, e.g. night deliveries. The commercial carrier may find it inconvenient and more costly to use several carriers if his markets lie on routes split among various for-hire carriers.

Some have argued that the negative features attributed to regulation of the trucking industry have forced more commercial trucking than necessary. McLachlin made this comment in a 1971 study of regulation of the trucking industry in Canada.[5] He cited Dominion Bureau of Statistics data that indicated commercial trucking appeared to be more prevalent in the provinces that regulated trucking. Statistics Canada no longer collects nor publishes the data series upon which the statement is based preventing a more current analysis and verification. Such verification is necessary because the DBS data series were discontinued because of doubt of their reliability.

Imperial Oil Limited provided information to the Economic Council of Canada in 1980 that that company transported a greater volume (75%) of their product by private fleet in Ontario than in Alberta (25%) where intraprovincial trucking regulation is not enforced.[6]

A study of for-hire rates among various provinces using data for 1975/76 found that rates in Manitoba tended to be lower than in other jurisdictions including Alberta where intraprovincial trucking is deregulated.[7] Profit margins for Manitoba common carriers are not excessive as reported above. Common carrier rates do not appear to be an incentive for more private carriage. Shippers/receivers may be choosing to be private carriers in order to provide themselves with better service. Shippers/receivers do have the option to complain to the Motor Transport Board about poor service, but no evidence has been provided of reasonable complaints not being handled.

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[5] D.L. McLachlin, Canadian Trucking Regulation, Discussion paper Series No. 1, No. 17 (Dept. of Economics, University of Calgary, Calgary 1971).

[6] James J. McRae, David M. Prescott, "An Econometric Analysis of the Effects of Regulation on the Canadian Common Carrier Industry", Regulation Reference Working Paper No. 3, Studies of Trucking Regulation: Vol. III, Economic Council of Canada (Ottawa 1980).

[7] Andrew Klymchuk, Private Trucking: Analysis and Implications, Consumer and Corporate Affairs Canada, Research Monograph 15 (Ottawa 1983) p. 11.

Information on the commercial trucking sector is limited, but the numbers and sizes of commercial trucks were obtained from the Manitoba vehicle registration file. These are displayed in Tables 7 and 8 along with the information on the other truck types. In Table 7, the number of trucks of each type by gross vehicle weight range is shown.

Commercial trucks are more numerous than for-hire trucks in most size categories under 36,000 kilograms. Almost two-thirds of such trucks fall into the under 4001 kilogram category.

Table 8 summarizes Manitoba truck fleet sizes by type. Only vehicles over 4,000 kilograms were considered because vehicles under this weight are more likely used as passenger vehicles and less for freight movement. The number of commercial vehicles above 4,000 kilograms is about eight times that of for-hire vehicles. The number of commercial fleets in each size class generally exceeds the number of for-hire fleets except for the fleet sizes over 15 trucks.

Commercial or for-hire carriers may also own trucks licensed in the 'other' category, but their use would be legally restricted to the uses of trucks in the 'other' category.

TABLE 7

Summary of Gross Vehicle Weights of Manitoba Trucks by Type, 1982[1]

Gross Vehicle Weight Range (Kilograms)	Number of Trucks				
	For-Hire	Commercial	Farm	Other	Total
Under 4,001	128	8,702	38,571	69,133	116,534
4,001 - 6,000	22	1,304	4,603	2,267	8,196
6,001 - 8,000	16	462	3,260	736	4,474
8,001 -10,000	46	451	3,867	1,057	5,421
10,001 -12,000	69	474	4,166	1,478	6,187
12,001 -14,000	62	488	3,990	786	5,326
14,001 -16,000	20	139	505	180	844
16,001 -18,000	7	35	223	125	390
18,001 -20,000	58	172	1,218	483	1,931
20,001 -24,000	83	285	1,645	900	2,913
24,001 -28,000	45	117	67	271	500
28,001 -32,000	43	39	25	105	212
32,001 -36,000	49	64	24	184	321
36,001 -40,000	934	644	290	955	2,823
40,001 -48,000	102	12	5	16	135
Over 48,000	440	48	29	93	610
Total	2,124	13,436	62,488	78,769	156,817

---

1. Source: Manitoba vehicle registration file, December 1982

TABLE 8

Summary of Manitoba Truck Fleets by Type, Over 4,000 Kg., 1982[1]

Number of Trucks In Fleet	Number of Fleets (Over 4,000 Kg.)				
	For-Hire	Commercial	Farm	Other	Total
1	126	1,607	15,524	3,264	20,521
2	60	450	2,939	567	4,016
3	31	130	452	237	850
4	20	75	104	103	302
5	13	34	50	54	151
6	18	22	20	43	103
7	5	18	15	27	65
8	2	13	13	23	51
9	6	7	8	13	34
10	6	6	3	15	30
11	3	10	0	10	23
12	5	4	1	11	21
13–15	5	9	2	9	25
16–20	6	5	0	9	20
21–25	6	5	1	9	21
26–30	2	2	0	4	8
31–35	2	2	0	6	10
36–40	1	1	0	5	7
Over 40	7	4	0	12	23
Total	324	2,404	19,132	4,421	26,281

1. Source: Manitoba vehicle registration file, December 1982

Farm Truck and 'Other' Truck Sectors

The licence classification system for trucks in Manitoba does not completely divide firms into those carrying goods for-hire or those providing their own trucking services. Two classifications of trucks, farm trucks and 'other' trucks include trucks used for-hire and trucks owned by non-trucking firms for providing their own services. For-hire carriers and commercial carriers may operate trucks in the 'other' categories, but with more restricted use. Farm and 'other' trucks may be used by owners for their own transportation needs and for selling trucking services to other shippers.

Farm Truck Sector

Although farm trucks are not often considered to be part of the trucking industry, their numbers warrant consideration here because they constitute a substantial amount of trucking capacity. The data in Tables 7 and 8 show that they number about 62,000 vehicles, and are the most numerous category when the under 4,000 kilogram vehicles are subtracted. There are one hundred and fourteen truck fleets containing five or more farm trucks.

A farm truck is defined as a truck owned or leased by a farmer, a person who in the opinion of the Registrar is engaged in farming operations to a significant degree. It can be used by a farmer or his employee for transporting products of the farm or products for use on the farm. As well, it can be used for hauling products for use on another farm or products of another farm, except for milk, eggs and livestock, without compensaton. Compensation is allowed for the transportation of grain, oilseeds, sugar beets, vegetables and fruits from the farm where the crop was grown to a grain elevator, processing plant, or market.

'Other' Trucking Sector

Another class of trucks exist which are allowed to be licenced with T or Y plates and these are defined by exception. Basically, this class contains private passenger trucks under 3700 kilograms; public service vehicles operated within a community such as delivery services; commercial trucks operated within a 30 kilometre radius of a designated community or within 20 kilometres of Winnipeg's perimeter; or any type of truck carrying specified exempt commodities. Those firms providing a for-hire service do not have their rates prescribed by the Province.

While this class of vehicles is the largest number of vehicles, most are primarily used as private passenger vehicles. The data from Tables 7 and 8 indicate that although this category contains almost 79,000 vehicles or 50.2% of the vehicles in the Province, 69,000 or 87.8% of these are under 4,000 kilograms. Nevertheless, when the remainder are organized into fleets, they still outnumber the fleets of for-hire and commercial carriers in every fleet size class. When organized by vehicle size, there are more vehicles in every size class of the 'other' trucks than in the commercial or for-hire category.

Owner-Operators

Within the trucking industry are a large number of small firms normally consisting of an owner-operator and a truck although some owner-operators own several trucks and hire drivers. Under the present regulatory system, their easiest and legal access to the industry is through acquisition of 'other' plates. The owner-operators also enter illegally the markets reserved by regulation for for-hire and commercial carriers.

Some of this illegal entry is in direct defiance of the regulations. Some occurs through complicity of shippers such as the fictitious purchase of the cargo from the shipper and re-sale to the receiver. Another strategem is leasing themselves and their equipment to a for-hire or commercial carrier. The advantage to these carriers is that the arrangement permits them to minimize their own investment in equipment. Owner-operators want to be treated as independent businessmen and usually do not join drivers' unions. The carriers are not required to pay employee expenses for their labour services. The leasing of driver and equipment is not permitted by law, but the practice has not been stopped, and is quite widespread. This leasing arrangement is used by for-hire carriers to expand their own capacity. The for-hire carriers also retain control of their market by bringing some of the owner-operators under their control.

The practice of expanding capacity through the for-hire carriers' leasing of owner-operators and their equipment may be a more efficient organization of the for-hire market than one where each owner-operator is allowed to operate as an independent firm. The few studies of Canadian trucking industry suggest that many firms may be of the size where economies of scale and size can be exploited to produce lower costs of producing services.

For-hire carriers do complain about owner-operators' 'pirating' necessary traffic and jeopardizing the economic viability of their industry. This complaint is directed at those owner-operators who refuse to come under the for-hire carriers' control when seeking to penetrate the for-hire market. Critics of regulation would argue that regulation has led to the for-hire carriers providing poorer service and charging higher rates than necessary and this has encouraged the independent operators to enter the for-hire market to offer a better service at a lower rate and obtain part of the traffic. From this perspective, the owner-operators who penetrate the for-hire carriers' market provide necessary competition and benefit the shipper by providng service at a lower rate. An alternative explanation for these illegal operations may be that the market available to the owner-operator through the carriage of exempt commodities and local carriage is small relative to the number of competing firms, and this forces owner-operators into the for-hire carriers' market in order to obtain traffic necessary for their own economic viability. If this is the case, then regulation has contained overentry of firms to one segment of the market to a large extent, but not completely. The 'pirating' activity could be harmful to the smaller for-hire carriers, but factual information on the extent of this 'pirating' is lacking.

The number of owner-operators who have leased themselves and vehicles has been estimated from the Manitoba registration file in Table 9. Approximately 1750 leased trucks over 4,000 kilograms were identified. Almost 1100 vehicles appeared to be leases with a truck and driver included in the lease. About 64% of these are for-hire vehicles, and 25% are commercial vehicles. The seven hundred leased vehicles and drivers in the for-hire group constitute 35% of for-hire vehicles over 4,000 kilograms, and 6% of the commercial vehicles in use. The for-hire carriers make the most use of these trucking subcontracts.

TABLE 9

Manitoba Leased Trucks by Type, Over 4,000 Kg., 1982

Truck Type	Straight[1] Lease	Trucking[2] Subcontract	Total Lease	Total Registered	Lease Percent of Total
For-hire	59	669	758	1,996	38.0
Commercial	355	277	632	4,734	13.4
Farm	14	25	39	23,917	0.2
Other	229	91	320	9,636	3.3
Total	657	1,092	1,749	40,283	4.3

1. Straight lease represents the lease of a truck without driver.
2. Trucking subcontract represents a lease other than the lease of a truck without driver. Included here are owner-operators and trucking firms leased as brokers or subcontractors. A considerable degree of judgement was required to differentiate between leases and subcontracts.

Source: Manitoba vehicle registration file, December 1982.

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REGULATION REVIEW: VEHICLE WEIGHTS AND DIMENSIONS

JUNE, 1983

SUMMARY

This report was written to provide information on vehicle weight and dimension regulations to the Motor Carrier Regulation Review Task Force. The paper contains four sections. Section one reviews the purpose behind each of the basic weight and dimension regulations. In section two the history of regulations from 1970 to 1983 are outlined, special regulations are discussed, the technical basis for the regulations are identified, and the basis for relaxing regulations is briefly stated. The benefits and costs of increased weight limits are discussed in section three. Finally, some general comments and observations regarding vehicle weights and dimensions are made in the conclusions.

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REGULATION REVIEW: VEHICLE WEIGHTS AND DIMENSIONS

1. WHY HAVE REGULATIONS

A. Purpose of Weight Limit Regulations

As the owner of its road and highway system, the Province imposes weight limits with the objective of protecting the highway infrastructure from excessive deterioration. These limits have taken three forms: gross vehicle weight, axle load, and load per unit width of tire restrictions (1)(2)(3)*.

i. Gross Vehicle Weight - limitations on GVW have been imposed to protect structures, such as bridges, from structural damage.

ii. Axle Load - the load imposed by an axle or group of axles on a pavement reduces the service life of the pavement. Pavements are generally designed to withstand a given number of equivalent single axle load (ESAL) repetitions over their life. A single 18,000 lb. axle load is one ESAL and other axle weights and combinations are rated in terms of number of ESALs. By restricting axle loads the damage due to a single axle or group of axles can be limited.

iii. Load Per Unit Width of Tire - this restriction serves to protect the pavement surface from excessive damage.

*(Note - numbers in () indicate references listed at end of report).

B. Purpose of Dimension Regulations

Dimension regulations have been imposed for safety and roadway design reasons.

i. Width - vehicles are limited to a maximum width so as to fit safely on a standard lane and meet lateral clearance requirements.

ii. Height - vehicle height is restricted to permit clearance under structures and wires, and to some extent for vehicle stability.

iii. Length - vehicle length is restricted for safety reasons because it affects the passing distance. Roadway geometry, such as turning radii at interchanges, is also affected somewhat by vehicle length.

2. WHAT THE REGULATIONS ARE

A. History of Manitoba Regulations From 1970 to 1983

Table 1 outlines the basic maximum vehicle weight and dimension changes from 1970 to the present (1)(4)(5). Figure 1 shows the increase in Manitoba gross vehicle weight limits from 1957 to 1981. The basic maximum vehicle weight and dimension regulations for bordering provinces and states are summarized in Table 2.

TABLE 1

History of Manitoba Regulations From 1970 to 1983[1]

Maximum	Road[2] Class			Date		
		1970	1975[3]	1978	1981	1983
Front Axle (kg.)	A	4590 kg	4590 kg		5500 kg	5500 kg
	B					5500 kg
Single Axle (kg.) (other than front)	A	8100 kg	9000 kg		9100 kg	9100 kg
	B	8100 kg	8100 kg		8200 kg	8200 kg
Tandem Axle (kg.)	A	14500 kg	16000 kg		16000 kg	16000 kg
	B	14500 kg	14500 kg		14500 kg	14500 kg
GVW (kg.)	A	33600 kg	50000 kg		56500 kg	56500 kg
	B	20000 kg	20000 kg		47630 kg	47630 kg
Weight/10mm tire width	A	500 lb/in				90 kg
	B	500 lb/in				90 kg
Width	A	102 in				102.4 in 2.6 m
Height	A	13.5 ft				13.5 ft 4.15 m
Length (single)	A	40 ft		41.0 ft 12.5 m		41.0 ft 12.5 m
Length (combination)	A	65 ft		70.5 ft 21.5 m	75.0 ft 23.0 m	75.0 ft 23.0 m

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Footnotes:

1. See the Manitoba Highway Traffic Act for more detailed 1983 Manitoba weight and dimension regulations (5).

2. Class A - Provincial Trunk Highway
   Class B - Provincial Road

3. There were three different Class A roads in 1975. Classifications changed over time as roads were upgraded.

FIGURE 1: INCREASING GROSS VEHICLE WEIGHT LIMITS IN MANITOBA

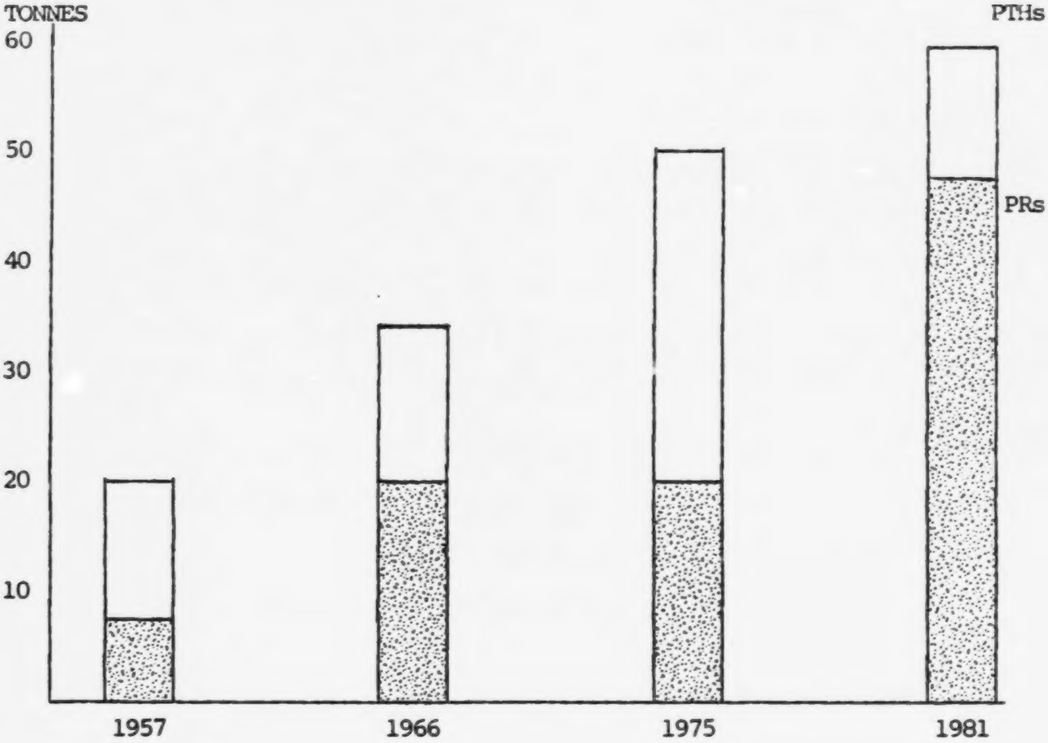


Table 2

Bordering Provinces and States 1982/83 Regulations (6)

Jurisdiction	GVW	Width	Height	Max. Length		Axle Limits		
				Single	Combo	Single	Tandem	Other
Minnesota	80,000 lb	96"	13'6"	40'	65'	20,000 lb	34,000 lb	600 lb/in. 10,000 lb/wheel
North Dakota	105,500 lb	96"	13'6"	40'	75'	20,000 lb	34,000 lb	550 lb/in. 10,000 lb/wheel
Saskatchewan	118,000 lb 53,500 kg	2.6m 102.4"	4.15m 13'6"	12.5m 41.0'	20.0m 65.6'	9100 kg 20,000 lb	16,000 kg 35,000 lb	
Ontario	140,000 lb 63,500 kg	2.6m 102.4"	4.15m 13'6"	11.0m 36.1'	21.0m 68.9'	10,000 kg 22,000 lb	19,110 kg 42,000 lb	

Note: The Surface Transportation Assistance Act of 1982 has increased the widths to 102" on the designated federal system (all interstates, most U.S. highways, and access to these highways). Truck-trailer combinations using 28 foot pups (twins only) and single trailer limits of 48 feet were also hmandated for this ighway system by the same legislation.

B. Special Regulations

The following are some of the major special regulations which affect vehicle weight and dimensions (1) (4).

i. Spring Restrictions - Spring thaw is a critical period for highways as far as damage due to wheel and axle loads. As the base under the pavement thaws it tends to become soft and perform plastically rather than elastically under loads. In other words, the pavement deflects under each load repetition but does not return to its initial form, eventually causing noticeable sinking.

To protect the roads which are susceptible to this type of damage, weight limits per unit width of tire tread are imposed. Benkelman beam tests are carried out on the roads in each district to measure deflections under load. The Maintenance Division uses the average reading for each section of highway to determine if the loads should be restricted. Depending upon the amount of deflection indicated by the tests, the road can be restricted to 60 kg. per 10 millimetres width of tire, or 45 kg per 10 millimetres width of tire, or left at the normal limit of 90 kg per 10 millimetres of tire width.

These restrictions can occur at any time in the spring, depending on climatic conditions. Generally, they are in effect during portions of April and May. Signs are posted on the road to give notice of the restriction.

ii. Winter Increase - An increase in the maximum tandem axle load of 10% is permitted from December 15 to February 28 each year. This increase is intended to benefit truckers during the winter months when the frozen soil can support greater loads.

iii. Special Permits - Special permits are required to move a load which is not otherwise permitted under the Highway Traffic Act. There are many limitations which have been imposed on the issuing of special permits. These are listed in a booklet called, "Guide to Issuing of Oversize Permits" which is put out by the Maintenance Division (7).

iv. Bridge Restrictions - Bridges which are rated as having a reduced load carrying capacity are given a restriction as to the maximum GVW allowed on the bridge. A restriction on the use of a bridge must be authorized by the Minister of Highways and Transportation and the restrictions are indicated by posting signs (8). Forms of deterioration which may indicate the need for restricting GVW using a bridge are: surface deterioration (crumbling of concrete on bridge deck or separation of layers of deck pavement), shifting of abutment or pilings, or damaged structural members. Bridges are also restricted due to original design and age of structure. It is interesting to note that the period when structural members of bridges are weakest is when it is very cold, during the 10% winter weight increase, as the members are more brittle.

C. Technical Basis of Regulations

Most vehicle weight and dimensions regulations have originated from the American Association of State Highway Officials (AASHO) tests and recommendations. Extensive tests were carried out by this organization, from 1958 to 1960, on every aspect of highway design. Many reports have come out of these tests and have been used to adapt the AASHO test results to local conditions on which highway agencies can base their design methods. The design standards which have emerged have affected both weight and dimension regulations (9)(10).

i. Weight Regulations - As discussed previously, pavements are designed to withstand a given number of ESAL repetitions. The factors for determining the equivalent number of 18,000 lb. axle loads for single axle and tandem axle loadings were developed from the AASHO road tests. The concept of reducing service life by increasing axle load limits was based on these tests which indicated the need to restrict the maximum axle load. The main assumption of the test results was that the deflection caused by an axle load is directly proportional to the damage to the road structure. Although this assumption has not been proved or disproved, the empirical equations which were derived from the AASHO tests have been adopted by many highway agencies for lack of a better method.

The original AASHO road tests found that an 18,000 lb. single axle load caused a deflection equivalent to a 32,000 lb. tandem axle load. The 18,000 lb. ESAL was therefore developed for a standard loading comparison figure. Typical revised AASHO equivalency factors for flexible pavements are given in Table 3(8). Figure 2 was devleoped from the table to compare the total ESAL of various truck configurations which are fully loaded and to estimate the relative damage caused by these vehicles compared to an automobile. For example, a typical semi-trailer truck loaded to the legal GVW limit produces an ESAL of .11 for the front single axle plus 1.28 for each tandem axle. This is a total ESAL of 2.67. By comparison, a large passenger car weighing 4,000 lbs. produces an ESAL of 0.0004. Therefore, the truck has a total ESAL 2.67 ÷ 0.0004 = 6675 times

TABLE 3

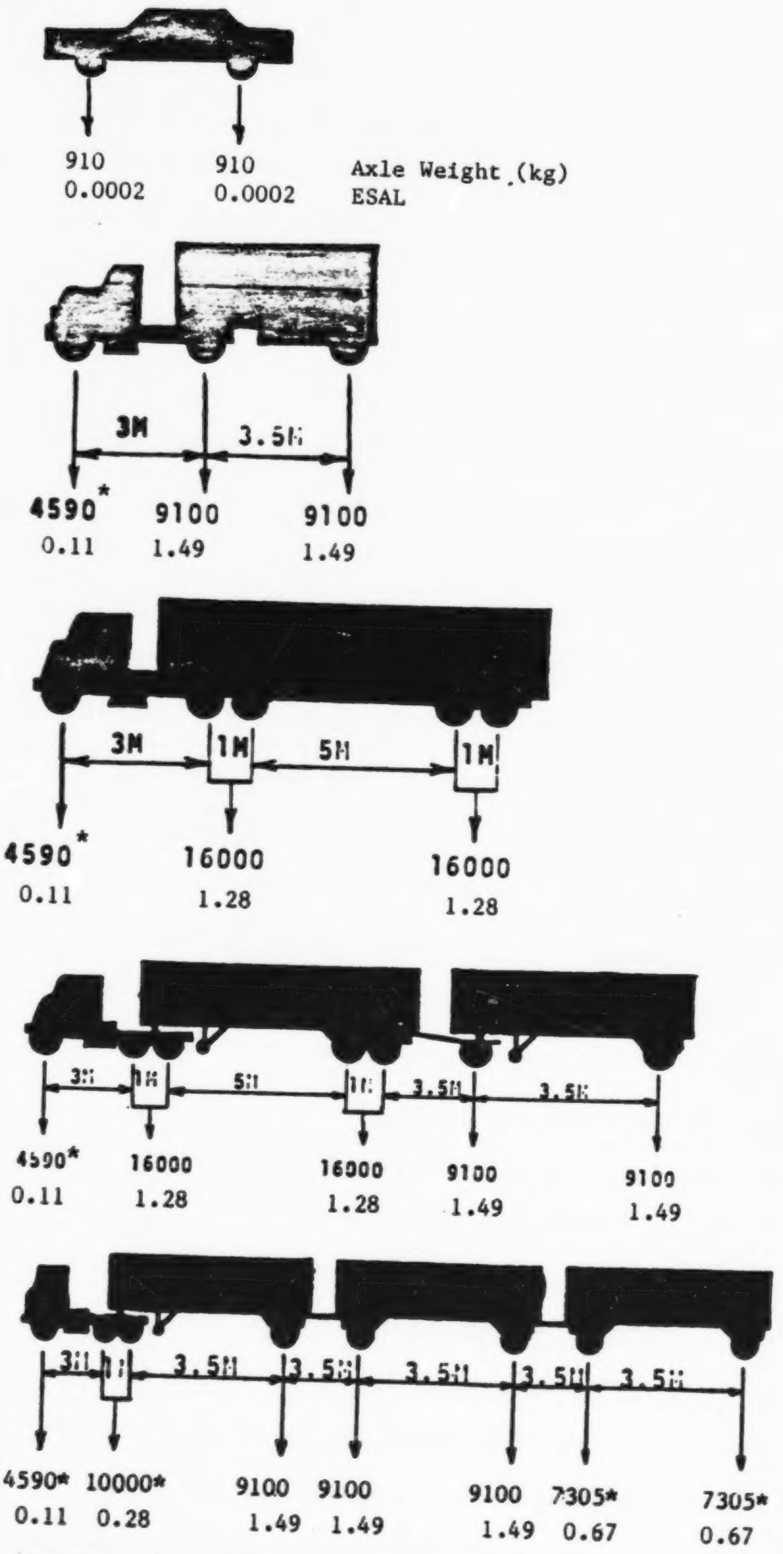
AASHO EQUIVALENCE FACTORS (9)

Axle Load Lbs.	Axle Load Kg.	Single Axle ESAL Factors	Tandem Axle ESAL Factors
2000	910	0.0002	-
6000	2720	0.01	-
10,000	4540	0.10	0.01
10,120	4590	0.11	0.01
12,000	5440	0.21	0.02
16,000	7260	0.65	0.06
16,100	7305	0.67	0.06
18,000	8160	1.00	0.09
20,060	9100	1.49	0.14
22,050	10,000	2.11	0.21
26,000	11,790	3.91	0.40
32,000	14,520	8.85	0.89
35,270	16,000	13.22	1.28
40,000	18,140	22.50	2.03

Notes:

1. Some values in table have been linearly interpolated from more complete data.
2. Factors in this table are typical factors for a flexible pavement. Values can change depending on variables such as pavement stiffness and surface quality.
3. 1 kg. equals 2.2046 lbs.
4. A tandem axle is a set of two axles spaced closely together.
5. Factors in this table are revised AASHO factors which were published in 1972.

FIGURE 2: COMPARISON OF RELATIVE PAVEMENT IMPACT OF VARIOUS VEHICLE TYPES


910
0.0002
910
0.0002
Axle Weight (kg)
ESAL
3M
3.5M
4590*
0.11
9100
1.49
9100
1.49
3M
1M
5M
1M
4590*
0.11
16000
1.28
16000
1.28
3M
1M
5M
1M
3.5M
3.5M
4590*
0.11
16000
1.28
16000
1.28
9100
1.49
9100
1.49
3M
1M
3.5M
3.5M
3.5M
3.5M
3.5M
4590*
0.11
10000*
0.28
9100
1.49
9100
1.49
9100
1.49
7305*
0.67
7305*
0.67

Total GVW (kgs)	Total ESAL	Equivalent Passenger Vehicles (ESAL/.0004)
1820	0.0004	1
22,790	3.09	7725
36,590	2.67	6675
54,790	5.65	14,125
56,500	6.20	15,500

* Assumed axle weight to meet GVW restriction.
Restrictions apply to Provincial Trunk Highways.

greater than the car and this implies that it inflicts 6675 times as much damage to the pavement.

Many highway agencies adopted the 18,000 lb. (8100 kg.) single axle and 32,000 lb. (14,500 kg.) tandem axle as maximum load limits. This is the case with Manitoba as can be seen for the 1970 figures in Table 1.

The load per unit width of tire is restricted because it was found that heavy loads on narrow tires can cause significant damage to the pavement surface (1).

Axle spacings have also been regulated, as short spacings were found to cause greater damage. Recent research has indicated, however, when sets of tandem axles are spaced too far apart they act independently causing a dynamic loading effect between the axles (1). Very little research is available on the dynamic loading impacts of vehicles on pavements. One study found that the dynamic impact of vehicles due to surface irregularities created loadings up to twice the static load (11).

Gross vehicle weight has been restricted primarily to protect structures, such as bridges, from structural damage. Bridges designed by the Bridge Division are based on AASHO design standards. For example, bridges are designed to carry one design vehicle on each side of the bridge. Previously the design vehicle was called an HS20S16 which was a 20 ton tractor with a 16 ton trailer. This was a 72,000 lb. GVW which was distributed on the bridge as two point loads at a given spacing. Today bridges are designed in the same manner; however, HS25S20 design vehicles (90,000 lb. GVW) are used.

The question could then be asked, are these structures which are built to carry 90,000 lb. (40,800 kg.) vehicles safe with allowable loads today of 124,600 lb. (56,500 kg.)? Due to the safety factors which are built into all structures, and better materials, the bridges can handle heavier loads than they were designed for. The impact of the increased GVW has therefore been a reduction in the life of the structures. For instance, a bridge which was designed for 100 years may require upgrading in 50 years due to the heavier loads.

ii. Dimension - Vehicle dimensions were also originally based on AASHO tests. Vehicle height and width in particular have remained virtually unchanged in Manitoba from the AASHO recommendations of 13.5 ft. (4.15 m) high and 8.5 ft. (2.59 m) wide. The only minor change has been in the conversion to metric units (e.g. width 8.5 ft. or 2.59 m. to 2.6 m, 8.53 ft.). These standards seem to be well entrenched in vehicle design and in roadway design for meeting vehicle clearance requirements.

Maximum permissible vehicle length has increased over the years. The technical reason for limiting vehicle length has been to allow for adequate passing distances on undivided highways. In this regard, limiting vehicle length on divided highways does not seem justified; however, with the trend of decreasing engine size in passenger vehicles to save fuel this factor could become more significant on undivided highways.

iii. Performance Characteristics - The acceleration, deceleration, and stability characteristics of longer and heavier vehicles is also important in determining what vehicles should be permitted to operate on the highway system. These performance characteristics are not regulated by the Manitoba Department of Highways and Transportation as they are thought to be self-regulated by the manufacturers, trucking industry, and insurance agencies. Concerns that the public has about large trucks, such as noise levels and accident rates, are also related to performance characteristics, which perhaps should be regulated more closely (3). A dearth of good information on this subject has limited the involvement of regulatory agencies and has prompted an extensive study to be carried out on all aspects of truck stability and control, and pavement response to heavy vehicles (12).

D. Basis of Increases

Increases in both vehicle weights and dimensions in Manitoba may be a reaction to the Trucking Association's lobbying rather than being justified on sound economic grounds. The main issue has been that increased weights and dimensions provide significant benefits for the trucking industry in the form of greater efficiency while the increased weights will reduce the life of the roads and thus increase maintenance and construction costs. Neither the Trucking Associations or the Highways Departments have been able to develop conclusive evidence that increased vehicle weights and dimensions are or are not economically justifiable. The evidence presented to date has favoured increasing allowable GVW while keeping axle load limits the same. As a result, it has been difficult for regulating agencies to deny weight limit increases, particularly when a neighouring jurisdiction has higher limits. However, the discussion has ignored the questions of who are the beneficiaries and who bear the costs. The answers to these questions provide a guide to how the additional costs due to the increased GVW should be financed. These economic considerations are discussed further in the next section.

3. IMPACTS OF INCREASED WEIGHT LIMITS ON THE HIGHWAY SYSTEM

A. Identification of Potential Impacts

i. The Highway System

Increased vehicle weights cause a reduction in service life of pavements and structures as well as increased maintenance costs if the roads are left unimproved. An alternative is to upgrade the roads and bridges so that the service life and maintenance costs remain the same. An analysis of the cost of upgrading the Provincial Trunk Highway System to carry 9000 kg. (20,000 lb.) single axle and 16,000 kg. (35,000 lb.) tandem axle loads, and a GVW of 50,000 kg. (110,000 lb.) was carried out by the Department in 1973 (4). This increase in weights from the previous limits (as indicated in Table 1) was estimated to require an added expenditure of $5 million per year for a 20 year period to bring the road system to the new standard.

It was also indicated in 1973 that there was not sufficient equipment nor skilled manpower available to achieve the upgrading in the 20 year period. Nevertheless, these new weight limits have been implemented on designated Class A highways since 1975 and the GVW limits on all highways were raised in 1981.

Expenditure on highways has not increased sufficiently to meet the need to improve road standards: decreasing service life of roads and the gradual deterioration of the highway infrastructure is taking place.

ii. The Motor Carriers

Several studies and reports have been done which have attempted to quantify the benefits of increased vehicle weight/dimensions (3)(4)(13). The main benefit of increasing vehicle weights and dimensions is in improving the efficiency of the carrier industry by reducing operating costs. Other indirect benefits which have been given are: a reduction in the number of vehicles using the highway which reduces congestion and accidents; lower freight rates resulting from intermodal competition; and reduced transit times for merchandise thus reducing the cost of tied up capital.

B. Methods of Measuring Impacts

i. The Highway System

While roads are designed to withstand a given number of ESAL repetitions, there is no proven method of attributing damage caused to a road by a specific vehicle. As previously mentioned, the

AASHO road tests developed ESAL factors relating single and tandem axle loads to deflection of the pavement, which was assumed to be directly related to pavement damage. The problem with these tests was that the trucks used were smaller than many of the vehicles used today. As a result, the impact of heavier axle loads, various axle spacings, and vehicle combinations can only be estimated. As well, the tests were conducted in Ottawa, Illinois, and therefore were subject to local climate and soil conditions. Factors have been developed for adjustment to specific conditions; however, accuracy is obviously lost.

Some tests have been conducted in Canada by the Alberta Research Council and the work is now in the analysis stage. A study to be done by a number of consultants, headed by Damas and Smith, may also prove useful in providing information on the effects of loads on pavements in Canada (12).

ii. The Motor Carriers

No adequate method is available for estimating the benefits of increased weight and dimensions. The studies have focused upon the savings in operating costs of motor carriers. In Manitoba, estimates of the benefits have been made independently from those estimates of the added costs to the highway system (4). The most appropriate method would be an unbiased examination of both costs and benefits. The Manitoba study hypothesized that fewer truck-trips at the same cost would be required to move the same volume of freight. Like the 1973 Alberta Highway Benefit Study (13), the study assumes that average capacity ratio and average payload ratios would not change.

The Alberta Highway Benefit Study estimated savings to be between $6 and $8 million in the first year and $30 million to $89 million in the fifth year of increased gross vehicle weights. The costs which were estimated by Alberta to upgrade and maintain the highway system were $18 million per year in increased maintenance costs and $5 million per year in new construction costs (4). The benefits of increased weights therefore outweighed the costs and the rationale for the highway strengthening program was established.

Similar studies were done in Manitoba at the same time and benefits were also found to outweigh costs (4), although calculated independently. Thus, the highway weight limits were increased in Manitoba in 1975 on designated highways when the highway strengthening program was initiated. It is not known if these benefits to the trucking industry have occurred and what the increased costs have been to the highway system as there has been little done in the way of followup studies.

While the calculated benefits exceed the estimated costs of increased highway weight limits implying a net social gain, the studies have neglected to identify who the beneficiaries and the bearers of the costs are. If the beneficiaries and bearers of the cost are different groups, then the change has unnecessarily transferred income from one group in society to another. For example, if the motor carriers retained all the benefits, but the provincial taxpayers paid the costs, then a shift in income from taxpayers to the motor carriers has occurred. Beneficiaries should be expected to pay directly or indirectly the cost of the increased gross vehicle weight limits in proportion to their receipt of the benefits. Taxpayers may be beneficiaries if the savings in operating costs is reflected in lower transportation rates and lower prices.

The appropriate financing of highway costs is becoming more critical. In Manitoba as well as elsewhere in North America, the cost of maintaining the highway infrastructure has exceeded the revenues available to pay for it. The Department of Highways and Transportation prepares an annual highway construction and maintenance work program based on the engineers' assessment of the highway and road network. This proposed program must be pared down to be consistent with the funding available in the provincial budget. Actual expenditures reflect the available funding, not the desired work program. Manitoba does not have a user pay policy for highways. Overall registration fees and fuel taxes have been historically linked to departmental spending, but the link is informal (14). Registration fees and fuel taxes are regarded as another source of revenues for the provincial government. When department spending exceeds these revenues, the finance department probably considers raising these fees and taxes, but does not necessarily increase them to match expenditures. More importantly, the increases are related to allowed expenditures, not needed expenditures as requested by the engineering staff. Valid concern exists that deferred maintenance is resulting in the gradual deterioration of the highway infrastructure. Proposals have been made in a number of American states that if users and taxpayers cannot afford to maintain the existing state highway infrastructure, then the system should be reduced and sections downgraded(15).

It is also difficult to attribute maintenance costs and bridge costs to road users. Recent studies done in the United States have tried to distribute highway costs among users. These methods are all based on the ESAL of a given vehicle as found from, or modified from, the AASHO road tests (16)(17)(18)(19).

4. CONCLUSIONS

The trend over the years has been towards increasing vehicle weights and vehicle length. Maximum axle loads have not increased in the same proportion as G.V.W. Any future increases in weight limits should be completely evaluated by a single benefit/cost approach that includes consideration of how the cost increases could be financed. An extensive study to be done over the next several years (12) may provide some answers to regulators' questions about heavy vehicle impacts on pavements and safety.

Short-term changes in vehicle weights and dimensions would appear to be towards uniformity in vehicle weights and dimensions between jurisdictions in Canada as recommended by the joint RTAC-CCMTA committee report on vehicle weights and dimensions (20). Further research is needed if economic and engineering considerations are to determine vehicle weight and dimension limits.

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